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## ABSTRACT

This research project was designed to develop and test empirically a new integrative model of cognition and to determine whether doing so would shed new light on why African American students continue to perform poorly in U.S. schools. The model is based on an integration of anthropology, psychology, and theology, with the understanding that human behavior is based on human thought. The integrative model says that cognition is a fused, cyclical interrelationship among the cognitive components, which are the senses, intellect, emotion, will, behavior, and stored knowledge. Two main assumptions were made in researching the model: that cognition is related to one's experiential history and that its components are interrelated functionally. Participants were adults and children from various racial and ethnic groups in California. Five questionnaires designed for the study measured: (1) demographics (all participants); (2) "mentalistic" structures (135 participants); (3) cognitive components (137 participants); (4) emotion and education (100 participants); and (5) a measure of the relationship among cognitive components and the accuracy of labels and definitions used, the "Black Rose" questionnaire (218 participants). Analysis of the data shows some validity of these two assumptions, suggesting that the model provides a basis for further research. The problems of African American students may persist because curricula are based on a lack of understanding and knowledge of human cognition. African American children may enter school with a negative mental structure toward U.S. schooling and U.S. society in general, and they may have negative emotional experiences in school. Five appendixes contain supplemental information, including the questionnaires and research tables. (Contains 9 figures, 34 tables, and 378 references.) (SLD)

**THE TESTING OF A NEW INTEGRATIVE MODEL OF COGNITION  
WITHIN THE CONTEXT OF A CONTINUALLY  
EXISTING EDUCATIONAL PROBLEM**

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**A Dissertation**  
**Presented to**  
**the Faculty of the School of Intercultural Studies**  
**Biola University**

**In Partial Fulfillment**  
**of the Requirements for the Degree**  
**Doctor of Education**

**by**  
**Alice M. Stanback**  
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## **ABSTRACT**

### **THE TESTING OF A NEW INTEGRATIVE MODEL OF COGNITION WITHIN THE CONTEXT OF A CONTINUALLY EXISTING EDUCATIONAL PROBLEM**

**Alice M. Stanback**

This research project was designed to develop and empirically test a new integrative model of cognition and to determine whether doing so would shed new light on why African American students continue to perform poorly in American schools. The poor performance of African American students was chosen because a context was needed in which to test this model and because of the author's familiarity with the subject. The model itself is based on the integration of anthropology, psychology, and theology, with the understanding that human behavior is based on human thought: Proverbs 23:7a, for as a man thinketh in his heart so is he.

Many of today's cognitive theories are rooted in evolution and social Darwinism, therefore the works of John Dewey and L. S. Vygotsky are discussed. John Ogbu's work was considered because of his macroethnographic approach to the problem of why African American students perform so

poorly in American schools.

Functionally, this integrative model says that cognition is a fused, cyclical, interrelationship between the cognitive components which are the senses, intellect, emotion, will, behavior, and stored knowledge. Thus, in researching it there were two main assumptions addressing 'cognition' which were, that cognition is related to one's experiential history, and that functionally its components are interrelated.

An analysis of the data showed some validity of the two underlying assumptions. This indicates that the model provides a base for further research. The discussion emphasizes the contention that the problem of African American's poor school performance may continue to persist because curricula are based on a lack of understanding and knowledge of human cognition. African American school children may enter school with a negative mentalistic structure toward American schooling and American society in general. They also have negative emotional experiences in school. These negative experiences combined with a negative mentalistic structure are likely to affect the functional role of the will in cognition: The children will choose to avoid such negative experiences thus perpetuating poor school performance.

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THE TESTING OF A NEW INTEGRATIVE MODEL OF  
COGNITION WITHIN THE CONTEXT OF A CONTINUALLY  
EXISTING EDUCATIONAL PROBLEM

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## **CHAPTER 1**

### **THE NATURE OF THE PROBLEM**

#### **Introduction**

For years educators and theorists have been attempting to explain why African Americans scholastically perform so poorly in American schools. They have wrestled with many different aspects and approaches to this problem and scholars from many different fields have made significant contributions to its solution. Yet, despite all their efforts, this problem still continues to plague educators and theorists today. Previous research has followed several strands. From the 1900s on, psychologists such as Bandura, Hull, Skinner, and Thorndike contributed considerably to educators' attempts at approaching educational and social problems through behavioral and social learning theories (cf., Bandura, 1971a, 1971b; Hull, 1943; Skinner, 1938, 1971; and Thorndike, 1898). Cognitive theorists contributed to a focus in education on problem solving, cognitive maps, and higher mental processes (Piaget, 1952; Vygotsky, 1987). In the late 1960s Jensen (1969) postulated that it was genetic factors which caused this problem. During the 1970s and 1980s, researchers focused on cultural factors, and explored the reasons why



the background, language and coping strategies of African Americans might be incompatible with success in mainstream Anglo-Saxon schools (e.g., Bond & Perry, 1969; Grier & Cobbs, 1969; Heath, 1983; Nye & Berardo, 1973; Staples, 1971; and Valentine & Andrew, 1989). Scholars such as John Ogbu (1974, 1978) extended the cultural argument by looking at the statuses within the larger society. Specifically, Ogbu explored the differences in perception between the immigrant minorities, who wanted to be in the U. S. and those whom he called caste minorities (I prefer subordinates to minorities), who were brought here against their will.

My contribution to this on-going problem is in the field of cognition: the acquisition, organization, and use of knowledge (Neisser, 1967). The goal of this study is to design a biblically integrative model of cognition and test it through researching the problem of why subordinate students, particularly African Americans, continue to do so poorly in American schools.

To date, and to my knowledge, there exists no empirically tested theory of cognition which adequately explains the historical profile of the African American's behavior towards American education. Although the purpose of this dissertation is not to explore the history of African Americans, I am proposing that the theory set forth in it does show a relationship between their history in

this country, their "mentalistic structure," and American education. Throughout this dissertation I use the term mentalistic structure as follows: the "mentally stored experiences of one's entire life." It is all these experiences that occupy the space designated "mentalistic structure."

Also in this dissertation I am proposing four things: first, that cognition has not sufficiently been defined; secondly, that mentalistic structures derive from or come into existence as a result of the combined workings of cognitive functions and one's experiences in life; next, that because of the nature of cognition, humans' mentalistic structures are comprised of their individual personal experiences and are historical in nature; and finally, that the historical experiences of African Americans in the United States, their unique mentalistic structures, and the nature of human cognition are key factors in assessing and/or determining why they do so poorly in American schools.

Therefore, throughout this study, I endeavor to build a case for a new model of cognition, one that addresses the above issues through a biblical definition of cognition (including its components) and the integration of anthropology, psychology, and theology. I then apply this model to the above question. Although I research this question within the context of schooling (an educational

arena), it is with the understanding that education is the transmission of culture, and therefore the applications are much wider than just formal schooling.

From a historical perspective, the African Americans' history begins with their forced migration to America. Their experiences in America were different from their experiences in the homeland, thus causing a distinction between them and their relatives back home and the Anglo-Saxons who were in the Americas. Their new culture derived from their past experiences in Africa and their new experiences in a Greco-Roman or Western society, therefore causing their culture and history to be different from that of those already living in America. Accordingly, African Americans are a group of individuals who share a mutual heritage but whose experiences are unique to each individual, and the American sociohistorical context is unique in important ways from other Western societies. It is within this context that my study focuses.

Because of the nature of human cognition and the African Americans' experience in this country, their mentalistic structures have always been different from those of the dominant group. Therefore, I propose that American education, both past and present, should recognize these differences, and acknowledge them in curriculum and educational policies and practices. Also, I am proposing that this integrative model of cognition is a better model

(i.e., than those based on evolutionary principles) upon which to base and design curriculum for our school system. If it is as I am suggesting, that education, cognition, history, and environment are all related, then these factors should be foundational in determining a framework upon which to base our educational curriculum. The first step in determining how to make this a reality is to design and test an integrative model of cognition, one which adequately explains the phenomena that can be observed within our classrooms, particularly among the African American students.

I realize the need for an integrative model of cognition and accordingly, I attempt to build one that is economical in resolving the school failure of subordinate students within our school system and which is capable of reflecting the phenomena that can be observed within classrooms. I also suggest that this model is suited as a paradigm through which to view American education and the academic failure or success of African Americans in our schools. As stated previously, I hold that educators and theorists have inaccurately assessed and delineated the nature of human cognition. Only in recent years have theorists seriously considered emotion as a distinct component of cognition, and the human will has been minimized or eliminated altogether in such theories. Two main purposes of any cognitive theory are to explain

(European theorists) and/or predict (American theorists) human behavior, but previous cognitive models have failed to adequately explain or predict why African American act the way they do towards American education.

I hold that human behavior is predicated upon one's beliefs; thus belief is key in explaining human behavior. One of the aims of this dissertation is to try to determine what African Americans believe about American education and why they respond to it as they do. Most of our educational curriculum is rooted in and built upon secular theories, mainly Darwinian evolution. I hold that curriculum reflects its authors' beliefs. If the theorists and educators who are responsible for our educational curriculum believe that one race is superior to another, genetically or otherwise, or that theirs is a "fittest" race, then their fruits/works will reflect and manifest this. I am also proposing that this is the message African Americans have received from our school curriculum.

World-view, culture, and behavior are all manifestations of people's beliefs; thus, as stated earlier, the aspect of belief is crucial in explaining human behavior (cf., Proverbs 23:7a). If African Americans perceive that the message of American curriculum is that they are inferior in any manner or should remain within certain boundaries in our society, or that its primary goal is not in their best interest, then their behavior towards

such curriculum will reflect this. If they do not "own" the message of school curriculum, then they will respond negatively towards it because they are experiencing it negatively; this is the natural outworking of human cognition. I venture to add that, if this is the case, then their behavior towards it will not change until their beliefs about it, and experiences within our educational institutions, also change. I also venture to say that it was the dominant group's belief in evolutionary principles (e.g., white supremacy) and Social Darwinism that originally caused our curriculum to reflect such biases or slants. For the most part, American educators and theorists have based their beliefs about human cognition and designed curriculum for our schools on theories which are rooted in evolution and Social Darwinism.

I hold that Darwinian evolution is a faulty premise upon which to base educational theories, and purpose to demonstrate that an integrative model of cognition, one based on the integration of anthropology, psychology, and theology is a much more suitable foundation upon which to build such theories. I demonstrate this in two ways: by discussing the cognitive theories of John Dewey and L.S. Vygotsky, each of which has noticeably influenced American education and has its roots in Darwinian evolution, and by designing and testing an integrative model of cognition.

### Assumptions

My present assumptions are as follows: (a) The reason subordinate groups, particularly African Americans, continue to do so poorly in American schools is because the mentalistic structures upon which our school system and its curriculum are designed are lacking in their assumptions about and understanding of human cognition: they misconstrue certain aspects of human cognition, (b) that castelike students in America perceive the educational process as an unpleasant experience, thus causing them to reject it and/or acquire a negative posture towards it: this being the natural outworking of human cognition; and (c) that African Americans do not believe that our educational system has their best interests as its goals.

### Problem Statement

Twenty-eight years of formal education, being raised in a black community, living through the sixties, and mainstreaming into America's dominant culture leads me to conclude that American schools and educators misconstrue the nature of human cognition and are dualistic in ideology, pragmatic in methodology, and dehumanizing in tendency. Ideologically they understand and systematically implement the gap between praxis and proclamation. They are relentless in their efforts to maintain the status-quo through new innovative methodologies. They are

dehumanizing in that, innate in the genesis and evolution of their philosophical beliefs and presuppositions regarding education and human cognition are ingrained faulty and misleading assumptions about human nature.

In this dissertation I construct a new model of cognition which is built upon the principles of integration as defined by Carter, Narramore, and Farnsworth; one which I believe accurately reflects human cognition and its processes (cf., Carter and Narramore, 1979; Farnsworth, 1985). The following is an integrative model of cognition. Although this model is depicted on two separate pages, it is to be viewed as one continuous circular model. The first column on figure 1b is a reproduction of the last column on figure 1a, but is in the present tense, to show an increase of knowledge in the mentalistic structures of Adam and Eve.



ACQUISITION OF KNOWLEDGE	ORGANIZATION OF KNOWLEDGE	USE OF KNOWLEDGE	INCREASE OF KNOWLEDGE
GEN. 2:16-3:5 (Senses)	GEN. 3:6 (Cognitive)	GEN. 3:6 (Somatic)	GEN. 3:7 LUKE 2:52 (Assimila- tion & Ac- comodation)

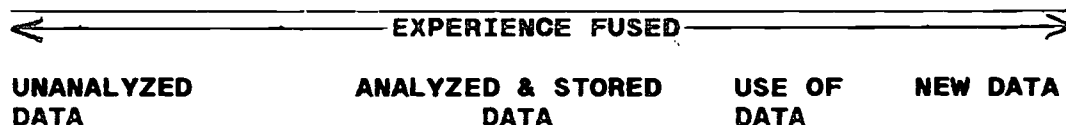
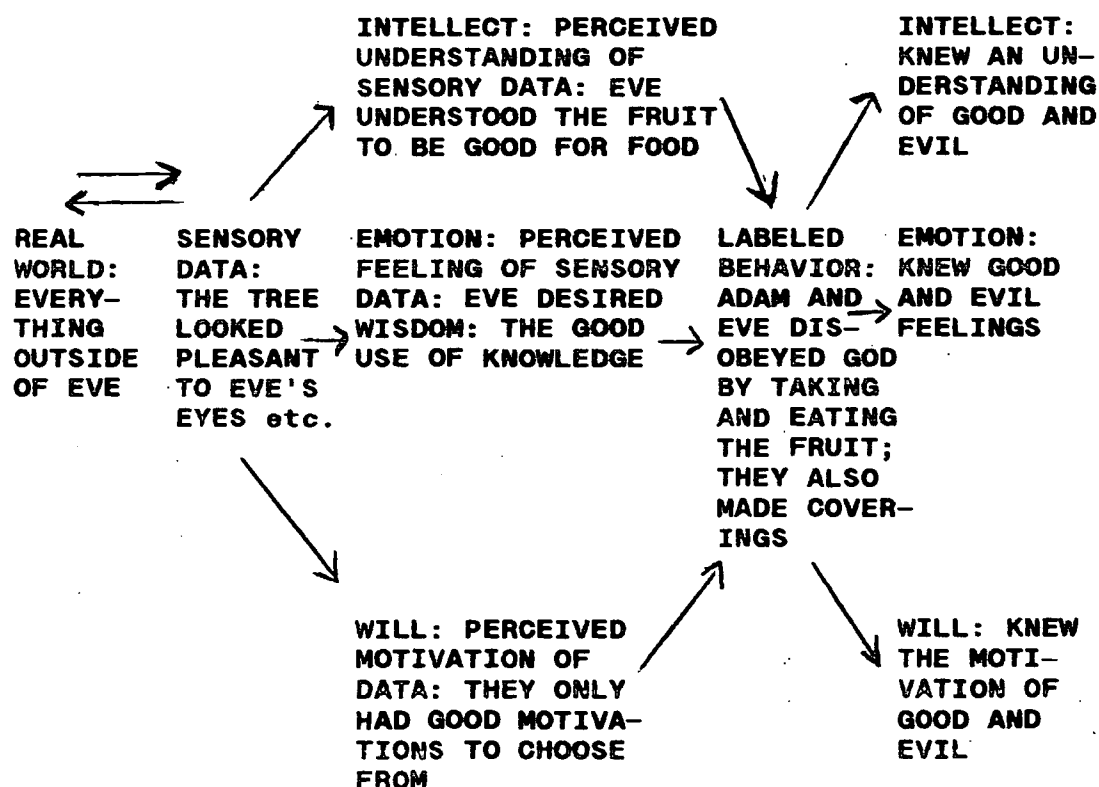


Figure 1a An Integrative Model of Cognition

INCREASE OF KNOWLEDGE GEN: 3:7 LUKE 2:52 (Assimilation & Accommodation)	ACQUISITION OF KNOWLEDGE GEN: 3:8-9 (Senses)	ORGANIZATION OF KNOWLEDGE GEN: 3:8,10 (Cognitive)	USE OF KNOWLEDGE GEN: 3:8 (Somatic)
--	---	--	--

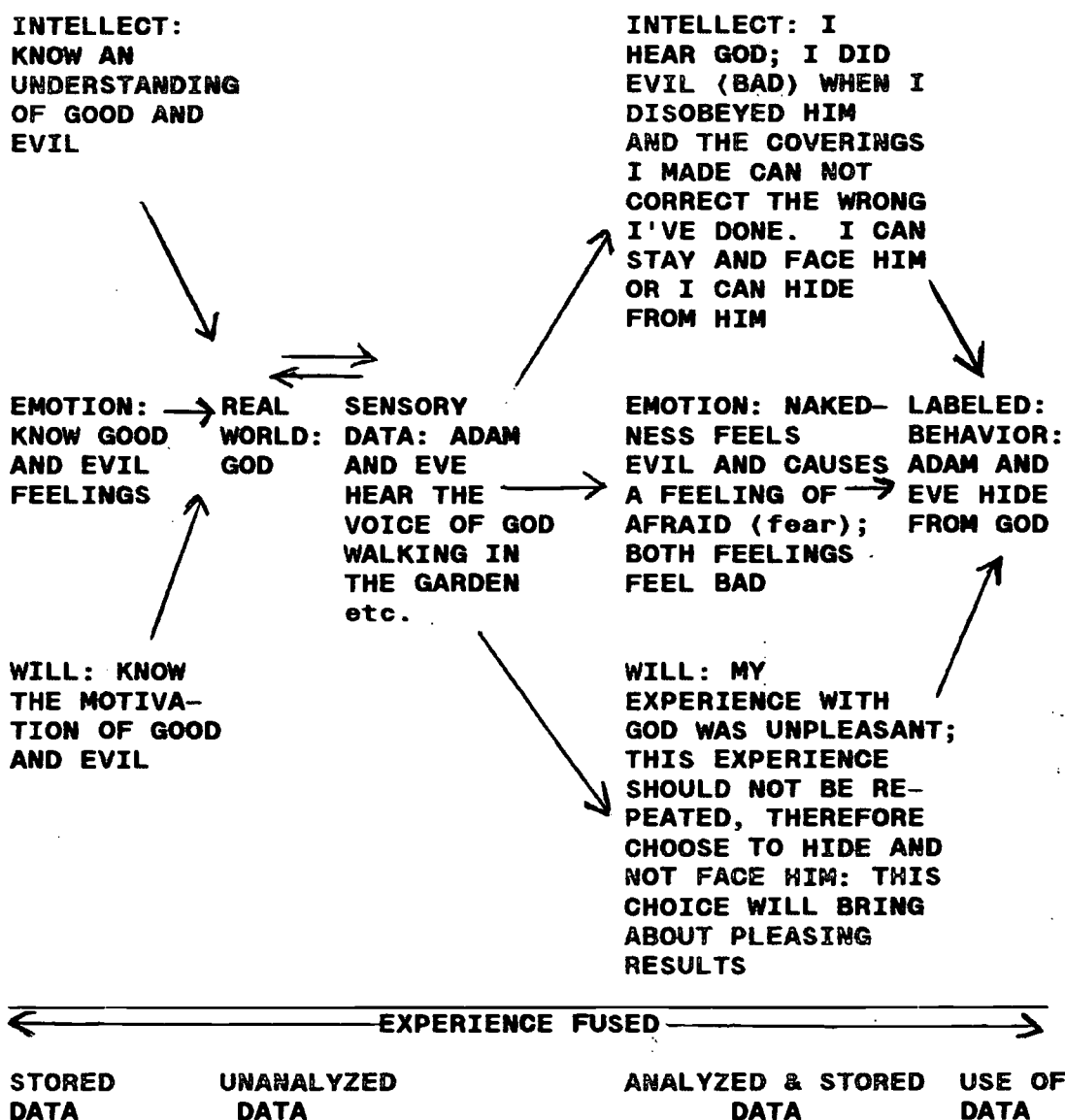


Figure 1b An Integrative Model of Cognition

According to this model human cognition is a fused, cyclical, interrelationship between the "cognitive components" which are the senses, intellect, emotion, will, behavior, and stored knowledge. The acquisition of knowledge involves the senses; the organization of knowledge involves the intellect, emotion, and will; behavior involves action; and an increase of knowledge involves storage. The components function or operate upon consciousness; thus to be conscious is to learn or to be actively involved in the educational process in some manner, i.e., upon being aware of self and environment, learning occurs. Students do not merely bring their "minds" to the classroom, they bring their lives. In life, everything they experience is permanently incorporated into their mentalistic structures. The underlying assumptions of the above statements are as follows: (a) If education is related to consciousness, then education is related to environment, (b) if education is related to environment, then education is passed on from generation to generation, (c) if education is passed on from generation to generation, then education is historical in nature, (d) if education is historical in nature, then one's mentalistic structure is also historical in nature, (e) if education is related to environment, then the content of education is different in different environments, (f) if the content of education is different in different environments, then the

content of one's mentalistic structure is different in different environments, (g) if all people have the same cognitive components, then in spite of the differences in environment, cognitively they still have some things in common (see Chapters 2 and 3).

This new model of cognition is built upon the disciplines of cognitive psychology, educational anthropology, and theology. I chose to include theology because I believe previous theorists have either overlooked or disregarded Scripture in addressing the subject of human cognition. Contrary to what other theorists believe, I hold that experience dictates the content of one's mentalistic structure, thus people themselves have more to do with what is in the mentalistic structure than providential nature--as Dewey and others believe. Using four separate self-designed questionnaires, the Mentalistic Structures, Cognitive Components, Emotion and Education, and Black Rose, I test this model in general for validity and specifically to see how it functions in explaining the problems African Americans have had in schooling. I use it also to address the specific assumptions and hypotheses on which I have chosen to focus.

The two main assumptions addressing cognition are as follows: (a) that cognition is related to one's experiential history, and (b) that functionally its components are interrelated. As one of the components of

cognition, emotion (with its inherent valence of pleasure and displeasure) affects the learning process of an individual. By extension, then, the nature of the African American experiential history regarding education, incorporating many negatively valenced emotional experiences, may contribute to explaining why African Americans do so poorly in American schools.

In the interest of furthering the understanding of the phenomenon of poor school performance among African Americans in the U.S., the four questionnaires mentioned above were designed to explore the two main assumptions via several of their logical derivatives.

#### Assumption 1: Experience

The essence of the first assumption is that experience impacts and shapes the content of mentalistic structures. Several logical extensions of this assumption lead to testable hypotheses. First, as experience changes across historical eras, so mentalistic structures shift. Since the African American experience has changed massively since the slavery era, the model predicts that the mentalistic structures of African Americans today will be significantly different than those of African Americans during the slavery era. The segregation and Black consciousness raising eras also provide time frames for which one can legitimately assume that the experience of most African

Americans were affected as a whole. So the mentalistic structures of African Americans today will be most like those of the Black consciousness raising era and least like those of the slavery era.

Second, if experience affects mentalistic structures, then one would expect that African Americans for whom one can assume shared experience will have similar mentalistic structures. So African Americans today will have some mentalistic structures for which the content is very similar across individuals because they can be expected to share some experiences across the society. Also, because individual experience will differ even across one society, it is unlikely that individuals will always agree with each other with regard to the content of mentalistic structures.

Third, the shifts in mentalistic structures that are expected across eras are likely to be influenced by major shifts in experience. These shifts are what distinguish one era from another. Under "normal" circumstance, parents (with their mentalistic structures) will be significant contributors to their child's experience. Therefore the child's mentalistic structures will be heavily influenced by parents' mentalistic structures. Under these conditions, mentalistic structures are likely to be similar between adjacent generations, in this study, those 30 years of age and under, and those 31 years of age and over.

**Assumption 2: Related Components**

The essence of the second assumption is that all six components of cognition (perception, intellect, emotion, will, behavior, and stored knowledge) work together. The model postulates that all the cognitive components always work together. However, it is unlikely that any one questionnaire designed for this study is fine-tuned enough to demonstrate this consistency. I hypothesize that the interconnection between the components of cognition could be demonstrated within a particular situation.

Because of my interest in African American school performance, further derivatives of the second assumption are focused on cognitive functioning in the academic setting. In this setting it is unlikely that there will be substantive disagreement regarding the importance of four of the cognitive components: perception, intellect, behavior (performance), and stored knowledge. However, it is my contention that emotion and will are equally important but have been historically overlooked. Due to limitations of exploratory research, emotion was chosen as a focus for this investigation (see Appendix C the Cognitive Components Questionnaire for information on the will).

The first such derivative is that since emotion is an integral component of cognition, students will have emotional responses to the academic setting. Second, since

all the cognitive components work together, they will impact one another. Emotion therefore is likely to provide a tenor or atmosphere to the whole of the cognitive process. The valence of emotion was expected to be demonstrably related to the functioning of the other cognitive components. Third, not only will students have emotions regarding the academic setting, but since these emotions will have a valence, the valence will be related to the students' posture toward school.

Thus, the related hypotheses are as follows: (a) the mentalistic structure of African Americans today will be most like those of the Black consciousness raising era and least like those of the slavery era, (b) African Americans today will have some mentalistic structures for which the content is very similar across individuals, however, not all mentalistic structures will demonstrate high similarity across individuals, (c) the mentalistic structures of African Americans will be similar between adjacent generations, (d) the six cognitive components (perception, intellect, emotion, will, behavior, and stored knowledge) can be demonstrated to work together within a particular situation, (e) students will have emotional responses to the various aspects of the academic setting, (f) the valence of emotion will be related to the functioning of the other cognitive components and to the students' view of learning as a process, and (g) the valence of emotion



generated in school will be related to the students' emotion or attitude about school.

In addition, each questionnaire was designed to test different aspects of the model itself. Specifically in reference to the application of the model and its relationship to the question of why African Americans continue to perform so poorly in school, the Mentalistic Structures Questionnaire tests the nature of the relationship between stored knowledge and the real world, i.e., African Americans' experience within the United States, and American education or schooling. The Cognitive Components Questionnaire tests the fused nature of cognition, i.e., the nature and role of valenced emotion in cognition, the organization of knowledge (see Figures 1a and 1b), and the relationship between the real world and the cognitive components. The Emotions and Education Questionnaire tests the nature of valenced emotion in cognition and the relationship between the cognitive components and stored knowledge. The Black Rose Questionnaire tests the nature and function of cognition and its components, the fused interrelationship among the cognitive components themselves, and the relationship between the real world, the cognitive components, and stored knowledge.

In the following chapters I discuss the background and literature review of this study, the integrative model.

**itself, the research methodology, an analysis of the research findings, and the conclusions and implications of this study.**

**CHAPTER 2**  
**CONTRIBUTIONS FROM EDUCATION AND PSYCHOLOGY**  
**TO THE STUDY OF COGNITION**

**Introduction**

Because of the nature of my dissertation, the newness of my model of cognition, and for clarification purposes only, I intervene periodically into the discussion of this literature review with some of my own thoughts. This review focuses primarily on John Dewey, L. S. Vygotsky, and John Ogbu because of their enormous influence, past and present, on the American educational system and the contemporary beliefs about why African Americans continue to do so poorly in American schools.

**John Dewey**

The principles of Darwinian Evolution, Social Darwinism, and Neo-Darwinism permeate the American educational system (Cole & Scribner, 1974; Sola, 1986, Taylor, 1981; and Vora, 1981). John Dewey believed in progressive education, which has its roots in two distinct philosophies, pragmatic and romantic naturalism. Because of his commitment to behaviorism and Darwinian Evolution, he rejected the idea of a "universal self" and argued that "individuality" was to be explained by the person's role in

the surrounding physical-social phenomena, without any connection with or interference from a supreme being (Gangel & Benson, 1983).

In his theory of cognition, Dewey perceived human consciousness as the fundamental characteristic of the self, and that physical phenomena are facts of consciousness. He says there are three forms of consciousness corresponding to (a) knowledge, (b) feeling, and (c) will. The cognitive aspect, or knowledge, adds information to the storehouse of the mind. The emotional aspect, or feeling, is an expression of interest, interest being a connection between the thing and the self. The will or volition is teleological in nature and is that part which involves activity. This activity is not conscious itself, but is an activity that consciousness does. All three forms of consciousness are aspects of the same mind, knowledge being the objective part, emotion being the subjective part, and will being the active part (Garrison & Shargel, 1988; Zigler, 1980).

For Dewey consciousness is an experience within which a smooth, continuous development takes place. "There is simply a continuous ordered sequence of acts, all adapted in themselves and in the order of their sequence, to reach a certain end" (Smith, 1985, p. 268). Consciousness is one experience made up of a sequence of acts, all of which are sensorimotor. Acts or behavior are interconnected within

experience. Truth lies within one's experience. Accordingly, the "fittest" (Darwin, 1897; Spencer, 1862/1958, 1887, 1888) will naturally excel intellectually and the "non-fittest" will not. Thus, the fittest are in no way responsible for the failure of the non-fittest.

He spoke of education from an ecological perspective. He saw man as responding to his environment through the natural processes of evolution. Mainly the world acts upon man rather than there being a reciprocal relationship between the two whereby they mutually affect each other. According to him man simply acts in response to the world's actions upon him. The fittest's response will be a useful act whereas the non-fittest's response will be a useless act. This is not to say that the fittest can not commit a useless act, but they do so much more infrequently than the non-fittest.

Dewey saw educational activity as an interrelationship between human organisms, social environment, and the nonhuman biophysical environment (Colwell, 1985). According to him nature is the setting of education. Humans constantly emerge within nature in environmental situations composed of a mix of human and nonhuman natural elements and brought about in the incessant flux of nature. "These situational problematic centers are the natural genesis of human experience, thought, and learning" (Colwell, 1985, p. 257).

Human experience is of, as well as in, nature. Human life is part of a process of biophysical growth, thus humans do not aim at growth, they exhibit it. Growth is an inevitable outcome of consciousness. As a result of adopting the educational philosophy of Dewey, American educators saw no role for "nurture" within the educational process, particularly where subordinate groups were concerned: after all, their fates were already determined (Cole & Scribner, 1974; Spencer, 1862/1958, 1887, 1988). When the theory of evolution is applied to man, the fittest is the "northern race" and its application is as follows:

Man has developed in the best manner and what is generally termed 'evil' on the earth is one of the most efficient means of growth. The noblest faculties of man are strengthened and perfected by struggle and effort; it is by unceasing warfare against physical evils and in the midst of difficulty and danger that energy, courage, self-reliance, and industry have become the common qualities of the 'northern-race.' It is by the battle with evil in all its hydra-headed forms, that the still nobler qualities have been steadily increasing in the world. Being thus trained and strengthened by their surroundings and possessing latent faculties capable of such noble development, they are surely destined for a higher and more permanent existence. (Wallace, 1890, p. 477)

(cf., Harris, 1968; Taylor, 1981; Vora, 1981; Watts, 1981).

The problem with applying evolution to mankind is that the subordinate groups are the evil in the world, as well as the training ground for the fittest to do battle, thereby gaining strength and being perfected through the struggle. Also the people of color are the hydra-headed forms of evil. In this scenario it does not take much

thought to assess who plays which role; also history bears witness and testifies to these truths.

Spencer (1888) says that as the mental traits and social environments of different peoples of the world diverge, the struggle for survival sets one group into conflict with another by means of which the more powerful or more adaptive drive "inferior varieties" into undesirable habitats and occasionally kill or exterminate them (e.g., Taylor, 1871/1929). An example of this would be the conflict between the American Indians and the early European settlers, resulting in the Indians being forced to live on reservations and nearly becoming extinct. Accordingly, evolutionists would interpret this to mean that natural forces dictated the fate of the Indians and not the Europeans themselves.

Our educational system is built upon these very principles and philosophies (Harris, 1968). They permeate, in one way or another, all of our institutions. The root of such ideologies is no more than Darwinian Evolution. Having a lack of knowledge as to the roots of these ideologies, we use them freely and without reservation in our homes and institutions. Theorists and educators should investigate the roots of their education philosophies before they blindly impose them on others within or outside of the classroom. In our society we are rewarded for learning whatever is placed before us, and doing so

with the least amount of resistance. Nevertheless, I say we are responsible for our actions and how they affect others. One does not usually question one's own culture, but I say we are responsible for questioning, evaluating, and reevaluating what society at-large has taught us, even our culture, even from birth.

According to Zigler (1980), John Dewey is the most preeminent social and educational philosopher of the twentieth century.

Dewey became something of a classical himself, an exemplar of the American liberal, whose critical and vital intelligence shaped several generations of American intellectuals, social scientist as well as philosophers and educators ....Dewey became a 'representative man' as well as quite possibly the most influential American academic philosopher of the twentieth century. (Shea, 1989, p. 297)

Dewey believed that only the fittest of the human race would excel academically, that is, provided their environment afforded them all the necessary tools in which to do so.

Dewey sees the "self" as always directed toward something beyond itself, the world, and the universe. Thus, the natural forces which work within human beings have their source beyond the universe, and cannot be controlled by them. According to him the will, as a component of the self, is an attitude towards the future, towards the production of possible consequences, and an attitude involving effort to foresee clearly and



comprehensively the probable results of ways of acting, and an active identification with some anticipated consequences. Effort or mere strain results when the mind is set up in such a way by the evolutionary process that it is capable of being endowed with power, and in fact is endowed with powers that are only to be applied to existing material (environment). To have interest is to take things as entering into a continuously developing situation. The time difference between the given incomplete state of affairs and the desired fulfillment exacts effort in transformation: it demands continuity of attention and endurance. Dewey defines this "attitude" as will (Dewey, 1924). I define this as blind faith and if one lives life according to this principle one is living a life propelled by misguided zeal. Thus, this misguided zeal is motivation for pressing forward.

Dewey argues that people are on a predestined course; emotion and will, when utilized properly, function to spur the individual forward, thereby aiding in completing action. One does not choose fate, one lives it.

Initially and at a surface level Dewey's theory may sound appealing, even to some contemporary educators, but it relieves one of "responsibility." Therefore one is not responsible for one's own actions nor for the actions of others. One is just another link in the process of evolution, having no control over destiny. On this issue,

I cannot agree. We have the capacity to choose and do have valid choices that we can make. To a degree we are in control of our fates. According to my model of cognition people can and do make choices regarding the world, self, and others and are responsible for these choices.

Every author expresses through philosophy and/or theory(s) beliefs about the metaphysical world, epistemology, axiology, and logic; this is to say what is real, what is truth, what is good, and how these things are communicated. If one (or a group) believes one's (their) race to be superior, this is reflected or communicated through culture, the media (i.e., modes and mediums of communication), and the institutions which are established within the society, particularly educational institutions. It is virtually impossible to separate one's beliefs from one's actions; as one thinks so is one. Thus, I extrapolate that this implies that most of America's institutions are saying they want to help subordinate groups succeed in this country, but in essence this is a falsehood.

Dewey's beliefs and philosophy of education still permeate our educational system. To date, we have not changed our philosophy of education or beliefs about human nature since they were so greatly impacted by the theory of evolution, John Dewey, and Social Darwinism. What has changed is how our educators implement these ideologies

within our school system (pragmatism). Ogbu says our philosophy of education is still antagonistic and discriminates against the subordinate groups in America. He says for many years Blacks, Mexicans, and Native Americans have been denied equal opportunities and equal education in our institutions (Ogbu, 1981, 1985). I say these are the fruits of Darwinian evolution. If American educators are to help the subordinate groups succeed in school, they will have to change their personal philosophies, ideologies, and beliefs about education, man, and human nature. Notwithstanding, Dewey is still praised in our society for his ingenuity and ability to solve the American dilemma of education in a democracy.

Dewey and Vygotsky are responsible for, or forerunners of, most of our contemporary research. Both men built their theoretical framework on evolutionary principles and presuppositions. Today a great deal of contemporary research is based on Vygotsky's theoretical framework of cognition.

#### L. S. Vygotsky

Vygotsky holds that the fittest minds, both cognitively and intellectually, are a result of the human brain's ability to evolve "higher mental processes." He believes that man evolved from an ameba, and this process took place in at least two domains: cognition and

humanness, i.e. an ameba is not human and does not have human cognition. Therefore, an attribute of human cognition is evolution. His theory centers around three themes which form the core of his theoretical framework: (a) a reliance on a genetic or developmental method, (b) the claim that higher mental processes in the individual have their origin in social processes, and (c) the claim that mental processes can be understood only if we understand the tools and signs that mediate them (Wertsch, 1985, pp. 14 & 15).

According to Vygotsky, human cognition "evolves." He posits Darwinian "natural selection" as the developmental force that operates in the first cognitive domain: Phylogenesis, i.e., human cognition in an "ameba state." Although this does not constitute human cognition as it is known today, it is the earliest form of life. From these domains (lower life forms) "homo sapiens" emerge; they are in the process of evolving from lower forms until they emerge. At this point (humanness) culture is manifested, and sociocultural as opposed to biological changes begin to occur in man.

This is also the stage of "mediational means": tools and signs which make possible for man the transmission of culture, and provide the mechanism for sociocultural change. The appearance of mediational means marks the emergence of "socio-historical" forces of change, whereas

it is now the decontextualization of mediational means that provides the possibility of 'sociocultural' change. In this stage tools, signs, etc. were assigned specific permanent meaning, which meant that meaning, ideas, and concepts could be preserved and widely communicated and shared. When these tools were taken out of their indigenous or functional context, they did not lose their assigned meaning.

The second domain, Sociocultural History, emerges as a result of the decontextualization of mediational means. The decontextualized information is linked to man's transition from rudimentary to advanced forms of higher mental functioning (e.g., Jack Goody [1977] believes that the Greek alphabet and the decontextualization of information are responsible for the industrial revolution which occurred among the northern race). The next domain has two forces of development, the natural and the social.

The third domain is Ontogenesis. In this domain Vygotsky conceptualized change in terms of two interacting forces of development, the natural and the sociocultural. Functionally, these two forces are fused. In relation to the previous domains, this is a new kind of genetic dynamic. He argues that although these two lines cannot be empirically separated during most phases of this domain, the domain itself cannot be properly understood unless these two forces (lines) are analyzed separately in order

to examine their mutually transformatory powers. This domain has two polar spheres: the "rudimentary" and "higher mental functionings." Development naturally flows from rudimentary to higher levels of mental functioning.

The fourth domain is Microgenesis. This domain has to do with experimental procedures in psychology. According to Vygotsky, when one is conducting laboratory studies, one must be aware of the microgenetic processes involved in the formation and execution of a psychological process.

Vygotsky recognized two basic types of microgenesis: The first is the short-term formation of a psychological process, and the second is the unfolding of an individual perceptual or conceptual act, often for the course of milliseconds. The first type has to do with laboratory observations, and the second with spontaneous acts, such as those in speech production. In his theory this domain is not clearly developed. Notwithstanding, he holds that his theory is holistic in its approach to human cognition (i.e., encompassing both its natural and cultural aspects). He sees this as the weak point of other theories; they are lacking in their ability to be holistic.

Vygotsky is critical of individual disciplines because their theorists work in "intellectual isolation."

One of the major stumbling blocks that has diverted psychology from this goal [defining humanity] is that psychologist [sic] have too often isolated and studied phenomena in such a way that they cannot communicate with one another, let alone with members

of other disciplines. They have tended to lose sight of the fact that their ultimate goal is to contribute to some integrated, holistic, picture of human nature. (Wertsch, 1985, p. 1)

Vygotsky says the isolation of these disciplines presents a kind of reductionism which assumes they cannot be explained on the basis of psychology. In his theory, cognition consists of a fusion of human mental functions (processes) and culture. In the first domain, innate survival instincts are acquired through the biological process of evolution. In the second domain, biological changes no longer occur, but changes result from interacting with the environment. In the third domain, the human becomes a "cultural being."

Vygotsky holds that people are actively rather than passively involved in cognition's processes. His theory allows for voluntariness, that is "will." For him, the understanding of human nature is crucial to the understanding of human cognition and the development of any cognitive theory.

As a theorist, Vygotsky is opposed to discovering the nature of the human mind by patchworking together a lot of quotations as some theorists do. He views the human as a holistic being and believes that any theory of cognition should include environment. Accordingly, his theory of cognition stresses the relationship of culture and cognition, and defines humans as a cultural being. Its

sociohistorical approach to cognitive development appeals to many of today's anthropologists, sociologists, theorists, educators, scholars, and researchers (Trueba, 1988, pp. 273-283).

According to Vygotsky's theory, cognition, in its third and highest domain, has a complex nature; it has an evolving characteristic. It involves the simultaneous, interrelated operation of more than one force of development, in which the natural and the social or cultural are fused. As a result he argues against any form of "reductionism" in developing cognitive theories, particularly theories such as Piaget's which assume that all aspects of cognitive development can be explained on the basis of principles devised to account for biological phenomena. He does not believe that principles such as adaptation and equilibration can account for all the aspects of cognitive development. According to him, they should be incorporated into a larger explanatory framework that deals with sociocultural phenomena as well. I strongly agree with him on this issue.

Vygotsky also fights against "cultural reductionism," which rests on the premise that human psychological processes can be explained solely on the basis of mastery and internalization of symbolic means or sociocultural practices, theories such as Jack Goody's (cf., Goody, 1977). Although Vygotsky took a firm stand against these



two extremes, biological and cultural reductionalism, Wertsch still criticizes him. Vygotsky's theory of cognition is mainly criticized because he fails to develop and research its two lines of cognitive development: the natural and the cultural (e.g., Davydov & Radzikhovskii, 1985; Wertsch, 1985). Notwithstanding, Vygotsky comes to the field of psychological science from a humanistic scholarship. His work in the field of cognitive development lays out a most ambitious program of unification, with a "historico-cultural" approach as the central feature. Claxton (1988) says that Vygotsky makes others see the necessity of assuming inherent mental structure and the absurdity of the opposite, i.e., associationist assumption because human beings are not as much like anaesthetised frogs as many theorists hoped.

My main criticisms of Vygotsky's work are (a) he fails to clearly define or clarify what he means by the natural line of development, and (b) his work focuses primarily on the cultural lines of mental functioning, thus leaving himself with no empirical evidence of the existence of a natural line of cognition, i.e., he fails to explore an essential part of his theoretical framework. I agree with him that one's mentalistic structure and one's history are invariantly related. Nevertheless when reading his work, as Davydov and Radzikhovskii (1985) say, one must distinguish between "Vygotsky the methodologist" and

**"Vygotsky the psychologist."**

As stated earlier, this is so because Vygotsky fails to develop and research the natural as well as a cultural line of development. I am proposing that the functioning of the human "cognitive apparatus" (as defined and delineated in my model) is the "natural" line of development which includes perception, intellect, emotion, will, behavior, and the ability to store analyzed data. This apparatus equips, facilitates, and enables one to interact with the objective world and analyze its content, or its data input, thus resulting in the natural integration of cognition and culture. Any valid model of cognition or theoretical framework should include this natural integration.

Through the process of integration, I intend to set forth a theoretical framework that explains the interrelationship and fused functioning of the components of cognition and their relationship to the real world and the uniquely individual mentalistic structures of human beings, particularly African Americans. The main fallacy of previous cognitive theories is that they are built upon the presuppositions and assumptions of evolution and Social Darwinism. Evolution and Social Darwinism are ideologically too narrow a concept upon which to build cognitive theories. Doctrinally, they have dehumanizing characteristics which strip some people of their human

dignity and Godlike characteristics. I simply cannot agree with their dehumanizing tendencies and believe that a biblical foundation is a much more suitable base upon which to build such theories.

John Ogbu

If my work is to be a continuation of existing research in the area of subordinates' school failure, it must build upon the work of previous scholars. I have chosen to build upon the work of John Ogbu, a Nigerian born anthropologist and professor at University of California, in Berkeley. His research is ground-breaking in the area of subordinates' lack of success in our schools, particularly the performance of African Americans. In an attempt to answer this question, Ogbu sets forth a taxonomy classifying some social groups in America as "autonomous," "immigrant," and "castelike." He argues that, for specific reasons, these groups perceive American education differently from those in the dominant group and differently among themselves. Although I build upon his work, my purpose is not specifically to test or verify it. Nevertheless, I believe that Ogbu's work contains many truths pertaining to African Americans, thus, if both our theories are correct, then our research findings should yield similar results, but with the understanding that our work may not agree at all points.

Ogbu has done an enormous amount of research in the field of minority education, particularly that of African Americans. In his book The Next Generation, he attempts to answer the question of why some children, especially subordinate children living in cities, do so poorly in school. He contends that African Americans and other students in subordinate groups perceive education differently from those in the dominant group. Also, African Americans perceive education differently from Nigerian students. According to him, West African students are very competitive, highly esteem education, and make sacrifices to obtain their education.

Based on previous knowledge, Ogbu could see no reason to believe that African Americans, whose ancestors may well have come from his homeland, have become less intelligent merely because of their being forced to migrate to the United States. He attributes their school failure to their 'African American experience,' i.e., what they experienced from the time they were forced to leave their homelands until now. He takes a sociocultural historical approach to viewing their school failure. He also implies that American educators have not suggested the most obvious reason for these groups' lack of success, their adaptation to and historical experiences in America.

According to Ogbu, to date American educators have failed to ask the question: What effect has the African

American experience had on the black student's perception of education in the U.S.?

Consequently, educators and scholars have never seriously posed the question about how the different positions traditionally assigned to blacks and whites in American society might affect the school performance of each race. On the whole, the field of minority education, especially black education, is marred by theoretical confusion, barren methodology, politics, and lack of emotional detachment. It is not surprising that many policies and programs generated in this context are unsuccessful in reducing the school performance gap between blacks and whites. (Ogbu 1978, p. 2)

Throughout his research, Ogbu asks two questions: (a) If Blacks can succeed so brilliantly in African schools, why do they fail so miserably in American schools, and (b) has the historical experience of subordinate groups in America impaired their perception of education in the United States? He concludes, in both cases, that "history" is a key factor in shaping one's perception of education.

He argues that on the "macro" level American Blacks are encouraged to fail. He asserts that human beings have a natural bent to succeed, and can do whatever they decide they want to do, but in African American Blacks, this bent has been thwarted by their sociocultural and sociohistorical experience in America. Accordingly, their perception of the world creates the reality to which they respond; individual experiences create individual realities. Their reality is different from the dominant group's reality.

American educators are primarily concerned with reforming African Americans and other subordinate groups by forcing upon them middle-class values and a foreign or alien mentalistic structure. These educators' efforts are mostly fruitless because they overlook the crucial factor of adaptation between subordinate groups and American institutions due to and based on their sociocultural and sociohistorical experiences in this country. They confuse intelligence with literacy and ask the wrong questions as a result of their false perception of the problem. As stated earlier, this author does not believe that ideology can be divorced from methodology, and that any curriculum, in its broadest sense, has both these components. Therefore if the educators' perception of the problem is wrong then their strategy for solving it is also wrong.

According to Ogbu, those who are honestly and realistically seeking to resolve the problem of poor achievement among subordinate students in this country must answer these questions: (a) Why have African Americans and others in subordinate groups adopted an antagonistic attitude towards American schools and education, (b) why do they not work hard in school, and (c) why do they not compete vigorously within the classroom?

Ogbu says another reason educators and scholars in this country ask the wrong questions is because our social scientists believe that the individual is responsible for

his own success or failure and as a result they (scholars and educators) are predisposed to designing remedial programs which treat failure as an individual problem, the history of which begins at birth. Such programs are unsuccessful and short-lived because of their ahistoric approach to a problem which has its roots in history.

Our educators and scholars are more concerned about the subordinate groups' characteristics than its academic success. Nevertheless, a realistic explanation of any subordinate group's present behavior in our educational institutions must take into account its historical patterns of adjustment and ways of life in this country and most likely its adjustment to urban education. Ogbu teaches that these groups respond, more or less, unconsciously to their limited opportunities in America and that high portions of school failure persist among them because the factors that produce this form of adaptation still exist. He bases his assumptions upon his taxonomy of minority groups.

Ogbu's taxonomy divides minority groups in this country into three categories or groups: autonomous immigrants, voluntary immigrants, and castelike or subordinate minorities.

Autonomous immigrants may possess a distinct group identity or sense of peoplehood, based on cultural, language, racial, or religious differences with the

dominant group (e.g., Jews, Amish, Mormons). They may be victims of prejudice, but not usually of social stratification. These groups are not economically or politically subordinated and exploited by the dominant group. Usually they have a cultural frame of reference which demonstrates and encourages school success.

Voluntary immigrants are groups of people who have recently moved more or less voluntarily to this host society. Initially they have low prestige, lack political power, and occupy the lowest rung of the occupational ladder. Yet, their present conditions do not necessarily reflect their socioeconomic status because they reject the invidious definitions that are placed upon them by the dominant group and view their present condition as both an upgrade from the last and temporary.

Voluntary immigrants are subjects of discrimination and pillory, but they do not experience it long enough to internalize its effects or to have it become an ingrained part of their culture. They adjust better in school and society because they measure their success or failure by comparing themselves with the standards of their homeland, their peers back there, or their immigrant neighbors. By making these types of comparisons, they view themselves as successful because there is significant evidence of their improvements.

They are also motivated by the promise of power,



political freedom, wealth. Although they have their own identity, language, and cultural frame of reference, these differences existed before they came to America and did not arise in opposition to the identity, language, and cultural frame of the dominant group who controls the public schools. Therefore, they perceive education as a means of reaching their goals in this country, so in school they tend to adapt the strategy of "accommodation without assimilation." Their main objective is to live a good life and make a better life for their children.

Castelike or subordinate minorities are those who have been incorporated into the society where they are found more or less involuntarily and permanently through slavery, colonization, or conquest. They are forced to occupy a menial position and denied true assimilation into the "mainstream."

Ogbu uses these terms as categories, yet he recognizes individual differences among peoples of all groups.

The classification of minorities into... [groups] is done by the anthropologist to order data from different sources about the experience of minority groups in school and society. (Ogbu, 1985, p. 864)

(I prefer the term subordinate to minority, thus I use it instead.) He says that castelike groups have greater difficulty adjusting in school and learning school curriculum because of persistent cultural and language differences and conflicts. They come to school with

distinct cultural and language frames of references. Therefore, proportionately, they are less successful in school than are those in the dominant group (Ogbu, 1978, 1985).

Members of these castelike groups' failure is associated with the way the wider society treats them, and how they themselves respond to this treatment. Because of their inferior treatment from society, including its institutions, they have come to distrust the educational system and Whites who run it. Unfair practices in corporate America also lead them to mistrust our institutions.

Castelike groups respond to this treatment by developing a complex identity system in which they see themselves as opposite to their "white oppressors." There is a collective posture among these groups, and their children also internalize this antagonistic attitude towards schools (Ogbu, 1985).

#### Author's Comments

Accordingly, at this point I am suggesting that though these groups may have internalized an avoidance posture towards schools, this is not the result of a collective stance, but rather a tendency characteristic of any group or person subjected to the exact same treatment as these groups. I choose to emphasize the concept that individuals

in any group have choices they can make and some of these group members choose to react differently towards the dominant group's treatment of them. I am proposing that individuals fail or succeed in school because they choose to "avoid" rather than approach the curriculum within our educational system. Yet, it is the natural tendency of human beings to avoid that which they perceive as negative or unpleasant to them. To choose to approach such a situation is unnatural yet possible. This avoidance or approach effect is a natural component of human cognition.

Cognition functions in such a way that humans naturally avoid or approach that which they emotively experience as bad or good respectively. Although it involves experience, I also include that which they perceive as pleasant or unpleasant in the case of recall. As humans interact with the real world, "experience" is internalized by way of perception which involves the senses. Upon perception, the external, internal (somatic), and internalized components and/or elements of the said experience simultaneously access three domains/components of cognition which are the intellect, the emotion, and the will. This is referred to in my chart as the organization of knowledge (see Figures 1a and 1b).

All the domains of cognition are interrelated (or interdependent), but functionally, the appraisal of internalized experience (data that are internalized through

perception) takes place within these three domains, i.e., intellect, emotion, and will, and is appraised by them. It is necessary to distinguish between these three domains theoretically but not functionally. Theoretically each are separate and distinct components of cognition yet functionally they are fused. The simultaneous functioning of these three domains produces "meaning," or the interpretation of one's experience(s) to one's self.

Meaning is triplex: we understand our experience(s) intellectually, emotionally, and volitionally. Because of the nature of cognition, innate in meaning is a historic, imminent, futuristic, element. When human experience is understood, reasoned, or intellectualized, ascribed as emotively good or bad, and appraised by the will as best to be avoided or approached, meaning occurs or is produced. These actions or the fused functioning of these three components transform our experience(s) into meaning. This is what I refer to as "new meaning," analyzed, or stored data, which in this form, i.e., a triplexed form with historical, imminent, and futuristic elements, is always immediately accessible to an individual. This is to say that the meaning of every experience (i.e., in an accumulative sense) that one has had is always stored, accessible, and imminent, whereas every minute detail about the experience or event may not be easily recalled, or even the experience or event itself. Meaning and storage are

available upon the "initial" consciousness of the individual or at the beginning of life, including life within the mother's womb, and upon an infant's initial experience with the real world (i.e., anything outside of the physical self). The storage of information and meaning is automatic and permanent.

People act upon the meaning(s) of their experience(s), or rather, their personal understanding of their experiences. They always act upon their immediate perception of their immediate experience(s) which actions are affected by their stored meaning of the real world; this process is true of all the components of cognition. Behavior based on "situational perception" and stored meaning yields "behavioral meaning." An individual gains new meaning from behavior and its repercussions, i.e., actions yield new meaning. This meaning is processed and acquired the same as all other meaning. Behavioral meaning is automatically stored. Individuals also interpret the effects of their behavior. When humans act they are acted upon. This causes them to analyze their behavior or the effects and repercussions of their behavior. This is an internal as well as external function. The subjective meaning and/or analysis of one's existence and one's understanding of self and one's own "being" are the fruits of these actions and processes.

Behavioral meaning is processed and acquired the same

as all other meaning, thus it is triplex or threefold, being born out of experience the same as all other meaning. In other words, knowledge and its interpretation are tantamount to experience. Thus the threefold appraisal of one's action(s) affects perception of the real world; and action or behavior, in any experience, is based upon the immediate perception of that experience, which encompasses accumulative understanding of it. One's accumulative understanding of the real world and the self must be understood to include culture, socialization, home-raising etc.. In other words, it must be understood from a sociohistorical perspective.

Cognition is a cyclic process. A completed cycle produces new knowledge which is stored immediately and permanently. Stored knowledge affects one's perception of the real world and is tantamount to one's "mentalistic structure." Mentalistic structures are transformed as a result of completed cognitive cycles and an increase of knowledge. Changes in mentalistic structures, i.e., changes in the sense of an increase of knowledge, result in changes in behavior. In other words, if one's behavior is to change, this change must be accompanied by a change in one's mentalistic structure. Based on the fused nature of cognition and simultaneously working together these two changes (in mentalistic structure and/or behavior) can be viewed as a metamorphosis in which the individual changes

from within and without. The changes in one's perception of, understanding of, feeling about, and volitional practice towards a real world, conscious experience parallel the changes in one's metamorphic being, i.e., new knowledge adds to one's self.

Mentalistic structures undergo an increase of knowledge. One has stored data, yet one is continually receiving incoming data. Neither stored nor incoming data are changed to facilitate this process. This incoming data is immediately stored and constitutes an increase of knowledge, i.e., within one's mentalistic structure. Thus, one's perception of the real world and/or one's self is constantly changing. Human behavior changes only as a result of an increase of knowledge, thus one's mentalistic structure changes only in the sense of and via a combination of an increase of knowledge which results in one's having access to more analyzed data to utilize. Accordingly, meaning is personal and permanently stored in one's mentalistic structure, therefore it perpetually affects one's perception of self and the real world. Perception extends the gamut of cognition.

In a context specific situation, mainly the educational arena, this is important to understand because stored information can be retrieved through the senses (e.g., a picture can evoke past events and emotions), therefore when students deal with educational curriculum,

they do so in a past, present, and futuristic manner. This is to say that they deal with it in the context of and in light of all accumulated or stored knowledge/experiences.

The fused functioning of cognition allows man to experience a metamorphic change (information added to one's self). We seek such a change for subordinate students in our schools and society at large. They need to perceive American education as a positive experience. They need to experience success within American institutions. According to my model of cognition the burden of change lies squarely on the shoulders' of the oppressed as well as their oppressors. Both of them will have to undergo transformations. Yet both of them interact with the environment from an imminently sociocultural and sociohistorical perspective. That is the children partake of their parents' mentalistic structures which are not pure and pristine; history testifies to this truth (Bullivant, 1989; Heath, 1988; Kaplan, 1989; Mercer, 1989; Ogbu, 1988; Trueba, 1988; Wolcott, 1987). As Ogbu says, progenitors, parents, caregivers, community environments, social norms, and significant others must be incorporated into our definition of culture. Culture affects one's perception of the real world.

If African Americans and other subordinate groups in the United States perceive education as an emotively



negative experience and as not being designed to directly benefit them, then this is why they take an avoidance stance against it. Because the purpose of education is to transmit the culture of the dominant group, such subordinate groups as African Americans feel shut out.

I suppose the question to ask here is whether the subordinate groups perceive their fate as being in the hands of the dominant group. Have they believed the message at large that America has sent to them? If they have, then they are people most miserable. Recent research indicates that African Americans perceive themselves as being members of a caste group (cf., Mickelson, 1981; Smith & Andrew, 1988; Valentine & Andrew, 1989).

Notwithstanding, ideal education affords hope to an individual, providing it fosters a positive congruency between all cognitive components. If educators succeed in accomplishing this task, they will also succeed in fostering a congruency between their stated goals and the goals of the students. However, inherent in this idea is the fact that the mentalistic structures of those controlling our educational institutions will have to experience an increase in information, information that most likely will be in conflict with their existing mentalistic structures, because they are no less victims of sociohistorical and sociocultural evils than subordinate groups are. Thus their transformation will be based on an

act of their will through faith, and not necessarily their knowledge of past experiences (cf., Hebrews 11:1). In this instance, the Christians' objective reality should be Scripture. Expressing faith quite often requires us to perform alien, unpleasant acts. Most often we perceive these acts as acts against ourselves, nevertheless in doing so we reap our just rewards. It is true that to some degree we are products of our culture, yet we have the freedom to make choices. We not only have the freedom to make choices, we have the responsibility to make them. To choose something that one has reasoned, assessed, and appraised as not being in one's best interest must be done through an act of faith. An act of faith does not entail bypassing human cognition or its function; quite the contrary, faith works within it.

For years those controlling our educational institutions have misgoverned them (cf., Aptheker, 1972, Catholic University of America, 1980; Franklin, 1980; Illich, 1977; Rattey, 1988). Ogbu is correct in saying that educators and administrators need to recognize and take responsibility for their misunderstandings, assumptions and presuppositions regarding human beings, human nature, and human cognition. America's educational system is built upon the inadequacies and limitations of natural revelation: the human beings's natural ability to comprehend and study truths revealed in nature. Howbeit,

natural revelation is never complete without being integrated with special revelation: that which cannot be comprehended naturally through the senses but must be revealed and illuminated by or from a greater source.

Such theorists as behaviorists, cognitive or social developmentalist, humanist, human developmentalist, and the like are all capable of comprehending an element of truth by observing natural phenomena and human tendencies, but none of these theorists have successfully designed a holistic integrative model of cognition. Their work is merely a niche in the subject of human cognition. Yet, my model attempts to integrate human cognition, culture, and the real world, thus striving to be a truly holistic integrative model of cognition. It incorporates natural (natural physical world) and special revelation (revelation directly from God) in a single model. It is impossible for us to begin to understand the mentalistic structures of individuals or individual groups of people unless we have a holistic model of cognition through which to view them.

As previously stated, Cole and Scribner (1974) have found that there are different types of intelligence, and that schooling merely offers one type. What students really learn in American schools are the ideologies of the dominant group in the United States, of which decontextualized information is only one aspect.

Decontextualized information equals knowledge without

a context, which is incapable of making anyone successful, in or out of school. This author does not agree with Goody (1977) that the Greek alphabet and the decontextualization of information is responsible for the industrial revolution or the Europeans' success during this period in human history. She believes that changes in morals and anthropological norms are responsible for these occurrences. Decontextualized information is incapable of producing fruits of success in and of itself. This type of knowledge must be accompanied by and fused with a like experience and acted out within a real life situation which parallels it. To experience textbook knowledge alone is not enough, it must be facilitated and accompanied by like experiences which can be acted out in the world at large, this completes the learning process, to do otherwise may cause abnormal or deviant behavior.

If students are to be successful in school or life, they must receive decontextualized information in conjunction with parallel experiences which can be acted out in the world at large, i.e., a lifestyle which facilitates and enhances textbook knowledge. As their knowledge increases through both types of experience, their lives will continue to be transformed in a like or complementary fashion. Eventually they will be able to teach others (see Figure 2). The sum of a person's experiences parallels lifestyle. If the student's

lifestyle outside of a specific educational arena does not provide a context in which to act out or experience what is taught within it, then the instructor's as well as the student's efforts are defeated. Students who are afforded such a context will be much more successful in our society than those who are not.

It is most important that these issues be dealt with in our schools and other institutions. If they are not, students of castelike groups will continue to reject American education. Dewey and Vygotsky were correct in saying that one's perception and experience affect intellectual development:

From the very first days of the child's development his activities acquire a meaning of their own in a system of social behavior and, being directed towards a definite purpose, are refracted through the prism of the child's environment.... This complex human structure is the product of a developmental process deeply rooted in the links between individual and social history. (Vygotsky, 1978, p. 30)

Trueba (1988) notes that the social and cultural basis for knowledge acquisition is predicated on the indivisibility of the psychological and sociocultural functions of the family and social groups. Thus, the integrative method is a more effective way of addressing problems within our school system.

Mercer (1989) accuses American education of focusing primarily on anglicizing subordinate groups. It emphasizes Anglo-American's culture, institutions, and way(s)-of-life

while neglecting the unique individuality, freedom, self-respect, and dignity of peoples in other groups.

Although multicultural education addresses this issue in our schools today, its results will only be as good as the instructors' interpretation and understanding of its curriculum. In America there has always been a gap between theory and practice. This may well be the result of the prominent use of decontextualized information within our society. Nevertheless, I believe the core problem of our educational system today as well as in the past is the mentalistic structures of those governing them, it is not a problem of a lack of methodology or programs.

Ogbu addresses this problem by adopting a neo-Marxist perspective which addresses the way in which the interest of the dominant group in America is translated into social values which inform schools, which in turn replicate the social structure (Trueba, 1988). Although I believe his work is very significant I cannot agree with the neo-Marxist perspective which says that it really does not matter what the construction of reality is, or whose construction it is; what matters is that some people have the ability to control others, and that this ability is not directly related to language, or to any psychological entity, but to the use of power and authority in the macrostructure (cf., Apple, 1979; Sharp & Green, 1975). I say that people are not automatons, but are thinking,

decision making, individuals who are ultimately responsible for their own actions. In making this statement I am not saying that macrostructures are not a reality or a viable threat to the welfare of subordinate groups in our society, or any society, because they are. Yet, over and above these structures men and women still have choices they can make and should make. Macrostructures are not impregnable or omnipotent, nor do I believe Ogbu is saying they are; he is merely stating a fact or "what is."

Although Ogbu's theory is widely accepted by many scholars, it is not without criticism. In all fairness to the reader these criticisms should be discussed.

#### Trueba's Criticism of Ogbu's Work

Henry Trueba (1988) speaks for some scholars in his criticisms of Ogbu's work. He says that Ogbu's "cultural ecologist's taxonomy" stereotypes castelike groups and does not account for those who have become successful within or in spite of the system. Ogbu tries to build an argument for the collective, psychological, culturally determined response of entire ethnic groups, in the face of oppressive societal forces suffered by the ancestors of the current group members.

Trueba criticizes Ogbu's work for not being based on a known psychological framework. On this issue he and I agree (i.e., it is not based on a known cognitive

framework). Therefore I am proposing that my model of cognition may serve as a psychological framework in which to understand most of Ogbu's research, such as (a) that dominant and non-dominant groups perceive education in America differently, (b) that castelike or subordinate groups in the United States associate the school system and its educational process with their "white oppressors," thereby juxtaposing themselves in opposition to it and White Americans (Ogbu, 1974, 1978, 1981, 1985, 1988). Because of the nature of cognition, these students are unable to distinguish between the curriculum taught in school and their white oppressors. They are also unable to distinguish between decontextualized information and themselves or their personal beings, e.g., the American media's portrayal of African Americans. I believe that people groups do have distinct characteristics or unique tendencies, yet as individuals this is also true of these same people. I assert that it is these group tendencies that Ogbu is referring to in his research.

According to Trueba, Ogbu's grouping of peoples is unfounded and highly stereotypical, mostly because it is built on imputed behavior and presumed psychological responses of certain members of ethnic groups, or on statistical macrosociological samples.

Ogbu's taxonomy does not clearly define the role of culture in the acquisition of knowledge, within



context-specific settings; it ignores the language factor in education; it does not explain the success of many subordinate students; and it lacks empirical evidence (Erickson, 1987). His theory tends to be reductionist to the position of economic determinism (Erickson, 1987). As a result, it may have placed him in a position that does not permit him to develop a strong culturally based theoretical approach to differential school achievement.

Trueba accuses Ogbu of not accounting for stratifications within subordinate groups or within the groups of those subordinates who succeed in spite of the system. His categorization is faulty and is based on reasoning contaminated by neo-Marxist and psychoanalytic biases. The positions he takes assume a culturally determined response to societal forces on the part of castelike groups. Therefore, presumed cultural response to societal forces becomes the basis of his taxonomic difference between groups and forms the structure for the interpretation of ethnographic data gathering. Here, I am assuming that Trueba is saying that Ogbu's research methodology is faulty, inadequate and/or suspect at the very least.

Ogbu omits Neo-Vygotskian-oriented research (i.e., socially and culturally based research) which clearly shows the role of culture in the acquisition of knowledge (cf., LCHC-Cole & D'Andrade, 1982; KEEP-Tharp & Gallimore, 1988;

Rueda, 1987). Such theorists hold that culture affects the entire process of knowledge acquisition and information processing, regardless of sociological forces, colonialist oppression, or historical backgrounds of individuals. Such research is predicated on ethnographic data collection.

"Central to neo-Vygotskian theory is the process of cognitive socialization taking place within the natural social units in which a child grows up" (Trueba, 1988, p. 280). According to this theory, the social and cultural basis for knowledge acquisition is predicated on the indivisibility of the psychological and sociocultural functions of the family and social group. This is what Trueba terms "socially based cognitive development."

Trueba concludes his criticisms by saying:

The categories of 'castelike,' 'immigrant,' and 'autonomous' minorities are not clearly defined, nor are they mutually exclusive, nor do they account for the internal stratification of ethnic groups. Cultural ecologists who use the above categories should also account for the similarities between refugee students, which exist at the same time as their differential academic success. Most of all, they should account for the documented success of 'castelike' minorities in spite of the stereotypes and any imputed or presumed 'castelike' behavior. (Trueba, 1988, p. 278)

My response to Trueba's criticisms of Ogbu's work is as follows: It is apparent that Trueba misunderstood Ogbu's argument. Ogbu is not merely stereotyping races or ethnic groups as castelike, rather he is saying that in each "castelike society" some people inevitably fall into a

caste category. He explains that the castelike situation is far from being merely an American problem and notes that Japan, Israel, and New Zealand all have castelike groups and all suffer from the same kinds of problems in school as well as the same kind of barriers to full functioning in adulthood (Ogbu, 1974, 1978, 1981, 1981b).

Contrary to what Trueba says, Ogbu bases much of his argument on social stratification rather than the stereotyping of subordinate groups. As previously stated, because he could not explain certain phenomena that he observed in our educational arenas, he developed his own explanation for the lack of school success among subordinate groups in America, one that goes beyond the classroom to the very structure of our society. He uses an anthropological framework for his research.

Ogbu's theoretical framework is as follows: like all other anthropologists who study what is in a community or culture, within his study he takes into account all these groups' economic, historical, social, and linguistic factors. He views educational questions through a wider lens than other researchers who focus mainly on teacher-child interaction. He sees the problem as neither typically American nor racial, but rather a response of industrial societies to subordinate groups.

He does not take the traditional approach of focusing on the students' home environment, school environment,

and/or heredity. He sees their problem of a lack of success as rooted in a system of caste or social stratification. His framework is comparative in that it compares the same variables in numerous societies; he looks at social order. In these societies he investigates at what point subordinate students are included in formal schooling, their degree of participation, the kind of participation offered them, their perception of education, and their performance in school. His research is not meant to solve the problem of a lack of school success among castelike groups but merely to define it.

Ogbu uses terms like "castelike minorities" and "castelike stratification" to describe these groups and as methodological tools to emphasize the structural and historical bases of their subordinate status. He finds three similarities among social structures of societies: (a) membership in the group is determined by birth; (b) social and occupational roles are not determined by education and ability, but by caste, and (c) the group occupies a permanent place in society, escape possible only by "passing" as members of the majority group or by emigration. His perspective is structural rather than environmental or biological (Ogbu, 1981b). (Note: Trueba says that many individuals from subordinate groups have succeeded in school without losing their cultural identity.)

Ogbu says that for two decades anthropologists' research has suggested one source of the student's classroom learning difficulties and that is the conflict which arises between their culture and language and the culture and language of the school. They focus on learning and communication styles, yet contemporary research goes beyond prescribing "cultural solutions" to the problem they generate. It is concerned with issues like how subordinate groups respond to the dominant groups' treatment of them. In his research, he accuses the United States of being a castelike society that has social stratifications and whose educators and theorists place the blame of school failure on subordinate students rather than its institutions.

Thus, programs to help low-caste children usually aim at correcting deficits that are perceived to be in the children rather than at changing the caste system that ultimately causes both their inferior school performance and their inferior adult status. (Ogbu, 1987, p. 15)

According to him, improving the educational system will not sufficiently dismantle its caste structure. He theorizes that the low school performance of castelike subordinates is directly attributed to the economic barriers which exist in their societies and that the only permanent solution to this problem is to eliminate these barriers. Remedial programs are effective only as they are needed in order to make the transition under the impact of structural change, because they do not encourage accurate analysis.

As stated earlier, Ogbu accuses American scholars of never having seriously asked the question of how roles assigned to Blacks and Whites early on in this country may have affected their perception of education. He sees education for Blacks in this country as marred, barren, political, and detached. The cause of lower school performance among black children lies largely within the American caste system or system of racial stratification. These students' situations are very rarely viewed from this perspective.

Ogbu makes a distinction between racial and class stratification. He says that a system of social stratification which, unlike that of class stratification, is based on ascribed rather than achieved criteria, and that, within the United States, racial stratification co-exists with class stratification and each is characterized by a distinct rate, pattern, and strategy of social mobility. Black and white social classes exist within stratified racial groups, so that their social mobility is influenced among other things by racial stratification and is not necessarily the same or equal.

Ogbu is fully aware that some subordinated students succeed in spite of the odds against them, but by percentage, they are not the norm, and his work deals with the norms among castelike and other groups. His argument centers on the effects of culture and history on knowledge

acquisition and for Trueba to say otherwise is unfounded (Ogbu, 1981, 1985).

Trueba says that the neo-Vygotskian scholars' research is more reliable than Ogbu's research: "Central to neo-Vygotskian theory is the process of cognitive socialization taking place within the natural social units in which a child grows up" (Trueba, 1988, p. 280).

According to this theory, the social and cultural basis for "knowledge acquisition" is predicated on the indivisibility of the psychological and sociocultural functions of the family and social group. Tharp and Gallimore (neo-Vygotskian scholars) say that school activities should encompass both internal and external features, but

Maintaining a unit of analysis that incorporates simultaneously all these features, features that social science has always separated, requires some discipline of thought, and places some burden of explanation on those who advocate it. (Tharp & Gallimore, 1988, p 282)

Spindler (1987a, 1987b), when referring to Ogbu's work, realizes the primary role of social institutions in the differential achievement of subordinate groups, but does not account for the differential cultural responses to institutional hindrances. He is aware that culture operates both at the collective macrosocial level and at the micropsychological levels. He says that theorists may have left out the critical role of culture in explaining the relationship between instructional processes and

learning processes.

In conclusion, I argue that although Ogbu's work is lacking a psychological framework, it is nevertheless important ground-breaking research. It includes variables such as culture, race, world-view, ethnicity, class, caste and caste-like tendencies, and social stratification (Ogbu, 1974, 1978, 1988). Trueba asks the question himself: is there any reason why a theoretical analysis cannot have implications for practice? I say that theory and practice are flip sides of the same coin.

According to Cole and Scribner (1974), before one can do meaningful research in the field of cognition a theory needs to be developed, one that integrates psychology and anthropology. Without a psychological foundation, the "meaning" of educational research findings in this area is ambiguous at best. To date,

...each investigator starts from his own basic assumptions and proceeds by means of his own data-gathering techniques.... Consequently, it is necessary to patch together evidence from an often-bewildering array of cultures and techniques in order to illuminate any specific culture-cognition relation. (p. 8-9)

In their attempt to answer whether differences in cognition are related to differences in basic cognitive processes or are merely the expressions of the many products that a universal human mind can manufacture, they concluded that their research had not answered this question because:



this and other central questions about culture and cognition arise from weaknesses in both theory and empirical investigation. Such a conclusion might seem fatuous; yet only because attempts have been made to put theories to the test have the ambiguities and weaknesses of global, undifferentiated concepts about Mind and Man become apparent. Conversely efforts to pull together and interpret facts accumulated from a variety of disconnected experiments have succeeded in revealing the lack of an integrating theory, without which unambiguous interpretation is impossible. (p. 172)

Cole and Scribner ended their study by compiling a list of suggestions that might help researchers in the future. The list is as follows: (a) A new theory of cognition needs to be designed, one that integrates both the cultural and cognitive aspects of learning; (b) research in the area of cognition and culture must not be egocentric in nature; (c) research in this area must conceptualize cognition in terms of process or operations in an effort to locate the specific sources of observed differences in performance; (d) researchers must be aware that any part of a situation-dependent theory is going to have to include a theory of situations (at present, no such theory exists); (e) researchers must determine if there are functional cognitive systems with cognition (e.g., Figures 1a and 1b, or one that is universal); (f) any hypotheses formulated in this area must integrate general knowledge from the various intellectual disciplines; (g) in cross-cultural experiments all kinds of performance ought to be readily interpreted in terms of what the person is doing; (h) comparisons should

be done among groups within the same culture; (i) longitudinal research should be designed to see what changes in life experience may lead to changes in cognitive skills; and (j) new approaches need to be designed to study the role of culture in psychological development.

### Conclusion

Based on the above findings, I conclude that my work in the field of cognition is not only on the cutting-edge of academia but is also necessary if we are to expand our knowledge and research in this field.

It appears that the human is a holistic being and should not be dichotomized. Cognition is a universal holistic concept which determines personality, that is the totality of one's overt as well as covert actions and being. Therefore, any solution to the failure of African Americans in American schools must include the reevaluation of and changes in the mentalistic structures of both those governing our schools and the African American as an individual. This entails a volitional act of faith on the part of the oppressed as well as their oppressors. Myers (1978) says scientists have come to understand what was assumed in Old Testament thought, that is, the physical basis of the human's spiritual being.

## **CHAPTER 3**

### **AN INTEGRATIVE MODEL OF COGNITION**

#### **Introduction**

In this chapter I introduce an integrative model of cognition, built upon the principles of integration set forth by Farnsworth (1985) and Carter and Narramore (1979). I also introduce a new theoretical framework which delineates cognition in the context of its fused interrelationship and reciprocal interaction with the real world. Ideologically, evolution is too narrow a base upon which to build a theory of cognition. This is not to say that I reject all that such theories have to say, because I do not. God is word, and all men have access to Him (Psalms 19:1-4; Romans 1:18-20). Psychology focuses primarily on human tendencies and the functions of human nature and theology focuses primarily on the study and interpretation of God's truth.

Farnsworth (1985) defines integration as the process whereby both psychology and theology (uniting and not fusing) retain their own identity while benefiting from each other's perspective and communicating the same truth. Carter and Narramore (1979) give five assumptions of integration which are as follows: (a) All truth is God's

truth; (b) theology represents the distillation of God's revelation of Himself to humanity in a linguistic, conceptual, and cultural medium which people can understand; (c) this revelation focuses primarily on human nature and human destiny in God's program; (d) psychology is primarily concerned with the mechanisms by which people function and the methods to assess and influence that functioning; and (e) as such, the content of psychology provides a statement on the nature and functioning of humanity.

Based on Carter and Narramore's assumptions I extrapolate three presuppositions which are as follows: (a) If all truth is God's truth, then in areas of truth, Scripture and Psychology should agree; (b) Scripture is the inerrant, infallible, verbal plenary inspired word of God, therefore whenever it addresses human cognition, it reveals its true nature; (c) Adam and Eve are the progenitors of the human race, and there are no other primogenitors of mankind apart from them, therefore a biblical model of cognition has universal implications and applications, and provides a valid theoretical framework upon which to base both qualitative (explanatory/macro) and quantitative (applied/micro) research. In the following discussion, I explore the relevant psychological and theological concepts which will help make the understanding of my model clearer.

## **PART I PSYCHOLOGY**

### **Introduction**

**This section begins with an assessment of how cognitive psychologists have defined and/or explained cognition and its processes, noting that the principles of integration are applied in all these instances. For the purpose of facilitating further study in the area of integration, I have kept the literature on psychology and theology separate and intervened periodically for clarification of my own position.**

### **Cognition**

**Cognition is the activity of knowing: the acquisition, organization, and use of knowledge (cf., Neisser, 1976; see Figures 1a and 1b).**

### **The Acquisition of Knowledge: Perception**

**When I speak of the real world and its relationship to sensory data input, I am referring to the "perceptual process." Perception is obtaining information about the environment and oneself in it; the function of perception is keeping in touch with the environment and guiding action in it. Individuals observe what goes on around them spontaneously and in accord with their plans and intentions. "Perceptual development is characterized by exploration and a search for invariants and affordances"**

(Tighe & Shepp, 1983, p. 308). As they are discovered, perception is differentiated and increasingly distinguished by embedded structures. Tighe and Shepp (1983) say:

The developmental change can be described as not only as increasingly differentiated but also as increasingly economical, as perceptual learning goes on in particular situations or specific tasks. (p. 308)

Perceptual learning does not require reinforcement because its function of selection, reinforcement and differentiation does not allow information to be lost. Perception under natural conditions is always whole and unified (i.e., data is received, or taken in by an individual, just as it is presented in one's environment; this is in contrast to Piagetian accommodation and assimilation). It is—and does become—more selective (based on an increase of knowledge). Its tendency is to rest in unification and economy. "What is selected, perceptually, depends on what has unification and economy" (Tighe & Shepp, 1983, p. 309).

"Perceiving" is the basic cognitive activity out of which all others must emerge. It is where cognition and reality meet through the sense organs. The senses contribute to intelligence: They provide information about the environment, and the perceiver picks up this information. It is a matter of discovering what the environment is really like and adapting to it (cf., Neisser, 1976).

According to Neisser (1976) the perceiver contributes to the perceptual act; this is known as "anticipatory perception." He says that perception and cognition are not merely operations in the head, but transactions with the world. These transactions do not just inform the perceiver, they also transform. Individuals are "created" by the cognitive acts in which they engage. Accordingly, sensation and perception are also related.

Koteskey (1983) says that sensation is related to mental processes as well as behavior. When energy strikes an appropriate receptor, the receptor initiates a neural impulse which is a response, or behavior. Sensation is the way in which one consciously comes into contact with the world.

Sensation refers to the stimulation of the receptors, the neural impulses in the sensory neurons, and the things...of which a person is consciously aware and can report to others.... We are created beings...so our sensory receptors and neural connections to the brain are very similar to those of animals. (Koteskey, 1983, p. 92-93)

Sensations become organized into perceptions that largely determine how one behaves. Humans are very similar to animals in terms of the stimuli to which they are sensitive. If they are to keep in contact with physical reality a changing sensory environment is essential; sensation does not enter a blank nervous system (cf., Koteskey, 1983).

The central nervous system is more than a passive

receiver of stimulation, but reacts in an integrated manner to sensation inputs. Emotion, motivation, and expectation all contribute to the interpretation of sensation.

Sensations provide "raw data" for perception, but these raw data are then combined with the mental process to create the world one experiences. In this process, current sensations interact with memories of the past, i.e., past experiences, to help create present experiences. In one's daily life, it is unlikely that one experiences "pure sensation," because sensation is automatically elaborated.

Lower animals' patterns of reaction to sensations seems to be innate. In humans, these reactions are organized by learning and thinking; in this respect humans are God-like. Although animals do organize their world, humans do it in a more meaningful, cognitive manner. Being created in the image of God influences how humans perceive the world. Perception enables people to organize the many incoming impulses into some stable form or figure (i.e., perceptual constancy; cf., Koteskey, 1983).

Therefore, information pickup requires an appropriate perceptual system. People and objects are mobile, therefore the human perceptual system is capable of serving a mobile organism in a world that includes mobile objects; i.e., it is adequate. Perception is a matter of discovering what the environment is really like and adapting to it. It is a continuing process of exploration and information



pick-up; this does not occur in any one instance and does not result from processing a single input. Perception is an activity that takes place "in-time" in which the perceiver can come to terms with the information offered by the environment. It depends on the skill and experience of the perceiver. It can be influenced by past experience, i.e., stored information (cf., Neisser, 1976).

Perceptions are transactions with the world. Perception applies properly to the entire cycle of cognition and not to any detached part of it. It is an activity in which both the "immediate past" and the "remote past" are brought to bear upon the present. It does not terminate in a precept; it is a kind of doing. It involves the world as well the nervous system. It does not change the world but perception and "action" are instrumental in changing the perceiver (cf., Neisser, 1976).

The perceiver undergoes "accommodation." In a Piagetian sense, accommodation is the individual's tendency to change in response to environmental demands (cf., Ginsburg & Oppen, 1979). One becomes what one is by virtue of what one has perceived and done in the past; one further creates and changes self by what one perceives and does in the present.

Every person's possibilities for perceiving and acting are unique, because no one else occupies exactly that position in the world or has the exact history. Neisser

agrees with Piaget's theory of accommodation; i.e., that cyclic interactions modify an initial schema. Nevertheless Neisser feels that Piaget's theory of assimilation is more dubious. Neisser does not support the idea that one alters the information one picks up; what an individual discovers from the world need not be wrong (cf., Neisser, 1976).

(Notwithstanding, this author believes that Piaget's definition of assimilation is sufficient in defining the process whereby information-data is picked-up and stored [see Figure 1a]).

Assimilation may be defined as follows: "...the complementary process by which the individual deals with an environmental event in terms of current structure"

(Ginsburg & Oppen, 1979, p. 18). Existing structures inherently receive incoming sensory-data input. Speaking somatically, sense-perception increases because the senses change over the span of human development (cf., Koteskey, 1983).

Newborns have all their senses but they are less developed than those of adults. Notwithstanding, theirs develop quickly and continuously. With increasing age people suffer a general decline in sensory sensitivity and discrimination (cf., Birren, 1964; see Figure 2, levels of intellectual development).

Davidson (1988) says that evidence for affective asymmetries in adults indicates that certain regions of the

two hemispheres of the brain are specialized for the regulation of certain positive and negative emotions. "A more precise basis for this asymmetry awaits additional research, but approach-avoidance may provide a suitable description" (p. 356).

The cognitive appraisal theorist, Madga Arnold (1960), discusses perception within the context of "cognitive activity in the experience of emotion." She defines emotion as the felt tendency towards anything intuitively appraised as good (beneficial), or away from anything intuitively appraised as bad (harmful). These two felt tendencies are by a pattern of psychological changes organized towards approach or withdrawal. Each emotion has a particular pattern, and emotion results from a sequence of events, beginning with perception, or the simple appraisal of an object (cf., Greenberg & Safran, 1987).

Before emotion enters into the picture, the object must be appraised as having an effect on the perceiver. This initial process is referred to as "intuitive appraisal," through which events are evaluated as good or bad. This appraisal process is direct and immediate. It has both a subjective and a physiological component. It is more like "object perception" than like the type of higher-level cognition that characterizes rational and deliberate judgment. Arnold (1960) characterizes this appraisal as a "sense judgment" that is made automatically

and unconsciously. It is the judgment of familiarity, which is made unwittingly and without conscious deliberation (cf., Greenberg & Safran, 1987).

This intuitive-appraisal process complements perception and produces an immediate action tendency to deal with object or events in a certain fashion. The sequence is perception-appraisal-emotion. Because this sequence is so closely knit, one's everyday experience is never the strictly objective knowledge of a thing: it is always a knowing-and-liking, or a knowing-and-disliking.

The intuitive-appraisal process is influenced by past experience through the agency of "affective-memories." Whatever is experienced in any sensory modality arouses a memory of similar objects and events and revives an affective memory. This revival is not a remembering of the affect but rather a present experience of the emotion produced by the revived original appraisal. The "affective-memory" elicited by the situation is a revival of the original appraisal, which produces a current emotion. Thus, what the individual is presently feeling can seem to point to danger despite knowledge to the contrary.

Although the intuitive-appraisal process is more like sense-perception (than higher-level cognition) and is immediate and direct, it interacts with higher-level cognition. The individual makes sense of the

intuitive-appraisal process by means of the "reappraisal process." One attributes the initial appraisal to a cause, makes an evaluation as to the best course of action, imagines consequences, and so on. The reappraisal process is closer to what is traditionally understood as a "conceptual," as opposed to a "perceptual," process. It is the action impulse inherent in the intuitive appraisal, and a cognitive assessment of emotion, that leads to action.

Lazarus, Coyne, and Folkman (1982) argue that it is a mistake to assume a unidirectional causal relationship between emotion and cognition: In reality, emotion and cognition are "fused" and completely interdependent. Lazarus' theory posits "cognitive process" as causes that arouse emotion responses and as coping operations to deal with an appraised situation (cf., Greenberg & Safran, 1987).

Lazarus et al. (1970) have constructed a framework in which each emotion is viewed as a complex response system comprised of three distinct subsystems. The first component consists of "stimulus properties": Stimulus is one's response to the stimulus influences, the perception of it. (The individual's disposition to interact with stimuli shapes the interaction with the environment.)

The second component is the "appraisal system". This component has a primary and a secondary system which are (a) stimulus properties, motives, belief, and sociocultural

factors (norms, values, and role demands), and (b) modes of behavior that will potentially enable the organism to cope with the situation as perceived.

The third component consists of three types of possible responses: cognitive, physiological/expressive, and instrumental, the sequence being stimulus-appraisal-response. Arnold and Lazarus' theories both have four components: perception, appraisal, emotion, and response. They both hold that a component of the experience of emotion (the initial intuitive appraisal) takes place at an automatic or unconscious level and that emotions have an adaptive significance in human functioning. For them each emotion is the result of several functions interacting together.

### The Organization of Knowledge

The Intellect. Intelligence is described by Piaget as existing in the activity of the individual, and as changing continuously. It is the process of adapting rather than levels of adaptive behavior. Its processes do not change, they are invariant. What does change is the activity itself (behavior, thought, & organic structures) (This author defines intelligence as follows: one's ability to use stored or analyzed data).

Development does not consist of changes in function, but of changes in behavior. Because behavior changes, the

properties of intellect that govern behavior must also change. These properties are called "structure" and are prone to change.

Structure changes because the individual functions in relation to the demands of the environment. These four components, behavior, structure, function, and environment comprise a representation of intelligence in Piaget's theory of cognitive development. Piaget's theory differs from his contemporaries in that they define intelligence as a relatively fixed and measurable quality. Learning is a component of intelligence (cf., Lefrancois, 1988).

According to Koteskey (1983), psychologists generally define learning as a relatively permanent change in behavior as a result of experience. It is a much simpler process than other intellectual processes, yet everyone agrees that it and higher mental processes influence human behavior. Even innate responses such as crying and elimination are modified by learning. Although humans and animals are very similar in the area of learning, it must not be forgotten that humans are created in the image of God, therefore the way they learn is different from that of lower animals: it is not a simple response. Changes in learning take place over a life-span.

Classical conditioning is possible at a very early age--but the capacity for one to learn such responses decreases with age (cf., Neisser, 1976). Sensation is a

factor of classical conditioning. It is obviously related to the stimulus-response kind of learning. "The stimulus is a sensation of some kind, and this sensation is then paired with a response" (Koteskey, 1983, p. 148). When there is no sensation, there is no stimulus, and no learning.

Koteskey (1983) says learning is generally divided into two main major areas: classical and operant (or instrumental) conditioning. He notes that "classical conditioning" of emotions can also, and does often, occur in humans (thus creating a context for the interaction of positive and negative stimuli within the classroom and emotion). According to Bufford (1981), many researchers agree that reinforcement is necessary to bring about changes in performance, although these changes may not be permanent.

There are two types of reinforcement, positive and negative. Positive reinforcement is presentation of a stimulus that increases the probability of response when the stimulus is presented following that response. Negative reinforcement is removal of a stimulus that is noxious. Humans learn responses that remove noxious stimuli and responses that prevent noxious stimuli from being presented. Classical and operant conditioning and the phenomena related to them have a profound impact on human behavior, since most of it is learned (cf., Koteskey,



p. 1983).

In one's animal-likeness in learning, one responds only to the reinforcing or punishing events in the world; in one's God-like cognitive processes, one is able to evaluate rationally the world, make decisions, and permanently change behavior, regardless of the conditions. Humans' God-like aspect of their intellectual processes is called "cognition." Koteskey defines cognition as follows

the symbolic or mental processes of human beings engaged in thinking, reasoning, creating, and solving problems. It refers to the active role we play in these activities by organizing, reorganizing, and using strategies to learn. (Koteskey, 1983, p. 165)

Because people are created in the image of God, they have the capacity to understand and know.

The Emotion. Mandler (1975, 1980), Royce and Diamond (1980), and Schachter and Singer (1962) (cf., Eisenberg, 1986) consider affect to be primarily a consequence of cognition. According to them, emotions are a product of the cognitive interpretation of events and of arousal. This interpretation can be of any component of emotion, the elicitors, expression, and experience of emotion (cf., Eisenberg, 1986; Lewis, Sullivan, & Michalson, 1984). In regard to "elicitors" researchers have suggested two theories: appraisal and discrepancy theory.

The appraisal theory states that emotion is the result of an individual's appraisal of a situation (e.g., Lazarus,

1968; Lazarus, Averill, & Optin, 1970; cf., Eisenberg, 1986). If the appraisal of a situation is positive or benign, then one's affective response will be positive; negative appraisals lead to negative affect.

The discrepancy theorists say that emotions are believed to be the consequences of discrepancies or incongruities between external events and the individual's cognitive representations (e.g., Berlyne, 1960; cf., Eisenberg, 1986). Stimuli that are too novel or discrepant are viewed as evoking unpleasant affect. Yet, an optimal degree of novelty evokes interest or other positive reactions.

James (1884, 1890) and Tomkins (1963) believe that one's experience of emotion is shaped by cognition (cf., Eisenberg, 1986). They propose that emotion is a response to the perception of physiological changes: One is fearful because one perceives the body to be trembling. Other theorists (e.g., Schacter & Singer, 1962; Reizenzein, 1983; cf., Eisenberg, 1986) have asserted that one's cognitive interpretation of general arousal or other aspects of functioning (i.e., thoughts and behaviors; cf., Eisenberg, 1986; Mandler, 1980) results in the experience of emotion. Here behavior is included.

Darwin (1872/1965) holds that emotions are biologically based, and that cognitively-based processes do relatively little to modify their expression. Freud

(1933/1968) also believes that emotion is primary (cf., Eisenberg, 1986). Other theorists propose that affect is primary and central to human functioning, and can lead to behavior without much contribution from cognitive processing (e.g., Izard, 1977, 1984; Tomkins, 1981; Zajonc, 1980; cf., Eisenberg, 1986). Nevertheless most theorists who have emphasized the independence or primacy of affect have acknowledged the role of cognition in affective responding (e.g., Freud, 1926; Izard, 1977; Tomkins, 1981; Zajonc & Markus, 1984; cf., Eisenberg, 1986).

Cowan (1982), Lewis et al. (1984), and Plutchik (1980) have addressed emotion from a more integrative perspective. Cowan adapts Piaget's (1981) approach that emotions and cognition are totally inseparable; cognitive schemas are always accompanied by affect, and affect always has some cognitive organization. He suggests that primarily affective schemas can lead to cognitive activities or vice versa (cf., Eisenberg, 1986).

Lewis et al. (1988) suggest a complex interplay between emotions and cognition. They labeled the intercyclng of the two "The Cognitive-Emotional Fugue." In their view, emotion and cognition are interwoven, and there are global emotional states of positive and negative. Emotion rather than causing or resulting from a cognitive process, seems to interface with learning, providing the setting for each learning phase as well as resulting from

that learning. The idea of precedence is too simple an explication for such a complex relationship. The relationship between emotion and cognition is complex, continuous, and finely tuned.

In conceptualizing the relationship between emotion and cognition, neither should be described as causing the other; rather each continually and progressively changes the other, weaving separate threads of behavior into a single composition, a fugue. (Lewis, 1988, p. 285-6)

Izard (1977) defines a given emotion as the integration of a particular set of neurochemical, motor, and mental processes. Freud holds that intellect is tied to memory and ideas and attempts to link emotion and cognition to somatic processes (see Labeled Behavior) through his model of psychic energy (psychic energy is a quasiphysiological entity that exercises force on the mind in a mechanistic fashion).

According to Greenberg and Safran (1987), ego analysts tend to emphasize the interdependence of affect and cognition. Interpersonal and object relations theorists say that affective experience is inseparably tied to social cognition. The analyst George Klein (1976) says that emotion is always embedded within an ideational matrix. Cognitive-behavioral therapists view emotions as the direct causal product of cognition (cf., Greenberg and Safran, 1987).

Experimentally oriented therapists, such as Rogers

(1961), hold that feeling is an emotionally toned experience and its cognized meaning. Gendlin, Jenney, and Shlein (1960) say feeling is a complex, bodily-felt sense, whose nature is preinceptual and preverbal, therefore feelings guide conceptualization.

Perls (1969, 1973), Perls and Hefferline (1951), and gestalt therapists take a holistic approach to human functioning: They see emotions as integrative responses by means of which people are connected to their environment. Emotions are considered to be a form of cognition through which people become aware of their needs, yet they are not synonymous with conceptual cognition.

Major theories of emotion agree that there are three aspects or components of emotion: neurophysiological -biochemical, motor or behavioral-expressive, and subjective-experimental. Under most circumstances cognitive factors contribute heavily to every aspect of the emotion process.

They are present as sufficient conditions in the generation of emotion; they participate as necessary processes in the symbolization and labeling of the emotion; and they influence emotion expression....the expression of emotion involves cognitive factors, especially when the expression occurs in a social context. (Izard, Kagan, & Zajonc, 1988, p. 5)

Izard (1971) defines personality as interrelated systems: the homeostatic, motor, emotion, perceptual, and cognitive systems. Emotional processes are primal in human behavior and the emotion system is the primary motivational

system for human beings (cf., Izard et al., 1988). This author also postulates that emotion is motivational.

According to Izard et al. (1984), human development is the growth process whereby the separate organismic systems become an effectively organized set--an autonomous integrated whole, capable of adapting as an individual and of forming social bonds. Emotions are significant determinants of selective attention and hence of the contents of perception and cognition. This author believes intellect, emotion, and will interact. A more adequate term for cognition is "The Cognition-Experience Fusion," which conveys more properly the holistic nature of human beings.

Tucker (1981) holds that the two hemispheres of the brain are differentially involved in emotion and cognition and that without the neurophysiological processes that give rise to emotion there is no cognition. Greenberg and Safran add the following:

Outer emotional expressions [are] frequently produced by the activation of emotional memory.... It is important to stress that emotional experiences themselves are stored in memory, as well as labels for these emotions. (Greenberg & Safran, 1987, p. 243-5)

Here the cognitive-somatic relationship is being discussed.

According to Izard et al. (1988), the term cognition as typically used by psychologists is a narrower concept than information processing. The latter term includes neural coding and the transmission of messages by genes,

hormones, and enzymes. He suggests that, particularly in infants, there are preprogramed motor patterns which contain affective information that can be processed without cognition. He assumes that such processing is basically affective processing mediated by the affective structures associated with the motor patterns of the fundamental emotions.

He postulates that some additional affective structures relating preprogramed affective information to other phenomena are required before the infant has the capacity to develop cognitive structures that involve representational memory.

These preprogramed and early acquired affective structures associated with the motor patterns of emotion expression are the foundation for the life-span development of a network or open system of "affective-cognitive" structures. (Izard et al., 1988, p. 20)

Izard et al. (1988) hold that some emotions are fully functional at birth. Both the differential emotions theory and the separate-systems view postulate that the behavioral-expressive component of emotion is a direct function of sensory processes that do not require cognitive mediation.

Yet, Izard says that although the processing of sensorimotor information is preprogramed, it is basically affective processing which is associated with the motor patterns of the fundamental emotions, and that affective

information processing is capable of "discrimination": the sensing and perceptual registration of a particular affective-eliciting pattern. (Based on the above information, perception and cognition are interrelated. Notwithstanding, the cognitive-arousal and cognitive-appraisal theorists hold that cognitive activity is important in the experience of emotion, cf., Arnold, 1960).

Izard further states that these motor patterns are innervated by the somatic nervous system and are under voluntary control, therefore, at the expressive level the stage is set for emotion-cognition interactions. He states that the infant makes decisions based on perception (cf., Izard, 1988). (This author does not hold, as Izard does that infants are non-thinking individuals; Izard does not clearly distinguish between thinking and non-thinking individuals, i.e., when does one begin to think.)

The differential emotions theory also assumes that in normal infants the essential quality of the "feeling component" of any basic emotion is active, that "emotion-specific" feeling is invariant over the life-span, and it is a central ingredient in selfhood and in the sensing of self as active and continuous across time and situations. (This author believes that the emotion-specific feelings which are common to all are good and evil, or pleasure and pain, which are fundamental to



all subsequent emotions.)

Neisser (1976) has this to say about infants: "What babies do know is how to find out about their environment and how to organize the information they obtain so it can help them obtain more" (p. 63). Infants perceive objects from the very first. They can track a moving object at an early age. Newborns open their eyes onto a world that is in information: they have to be ready for some of it if they are to engage in the perceptual cycle and become ready for more. Accordingly, newborns must be credited with a certain amount of innate perceptual equipment: This includes the sense organs and cognitive processes. Their perceptual cycle is concrete and specific from the beginning (Neisser, 1976).

After summarizing the works of several experimenters (i.e., Bower, Broughton, & Moore, 1970; Bower, 1964; Bower, 1965; Frantz, 1961; Gibson & Walk, 1960; Wertheimer, 1962; and Tronick & Clanton, 1971), Eysenck (1984) concludes that very young infants seem to possess some of the same main skills involved in perception as do adults, although they may be deficient in several respects.

In relation to the development of perceptual skills, it is clear that they are (a) available shortly after birth (according to Wertheimer, as early as 10 minutes old), (b) there is a considerable increase in the precision and refinement of perceptual skills during the first few

months, and (c) that the attainment of adult-like perception is a lengthy process. (This author agrees that infants are capable of cognitive processes and that, normally, this processing continues throughout the life-span. It is not a matter of waiting for cognition to occur but rather a matter of an increase in knowledge.)

Izard et al. (1984) said that not all emotions are present at birth. Later-appearing emotions are preprogramed on a biological clock, and their time of emergence is a function of the maturation of their underlying neural substances and of the substrates of the cognitive and motor functions that subserve the motivational component of emotions. Emotions operating separately (differential emotions theory) and in combination or patterns constitute the chief motivational system, the most important wellspring of human behavior. Emotions subserve the growth processes and thus allow the separate organismic systems to become an effectively organized, integrated whole (cf., Izard et al., 1988).

Emotions are separate but interrelated, interactive systems. Empirical evidence indicates that different emotions and patterns of emotions affect perception and cognitive processes differently. Also, there is interaction between the neural substrates of emotion and cognition; they share common structures in the limbic system (cf., Izard et al., 1984).

Emotions and cognition interact in a variety of ways at the motor-expressive level. Emotion expression by means of sensory feedback (e.g., Izard, 1977) or self-perception (cf., Laird, Wagener, Halal, & Szegada, 1982) leads to emotion feeling/experience, which in turn influences perceptual and cognitive processes: attention focusing, learning, and memory. (Here cognition is seen as a continuous cycle, going full-circle from the real world to behavior and from behavior back to the real world.)

Cognitive processes can induce emotion, which in turn significantly influences cognition in specific ways. According to Laird et al. (1982), the induction of specific emotion expression leads to the corresponding emotion experience that produces specific effects on learning and memory. Emotion conceived as motivation for cognitive behavior can also be conceived as primal in development. It facilitates the functioning and organization of the various organismic systems.

The invariance of emotion over the life-span provides a sense of continuity and contributes to the development of the self-image or concept of self (ego). Feeling is the mental representation of emotion. "Emotion experience" is both "felt" and "symbolized:" the infant who can represent emotion only as motor expression and feeling can eventually become capable of feeling one emotion while symbolizing and verbalizing another. "Emotion feeling" states are the

motivational aspect of experience, and through development they become linked to images, symbols, and thought.

Izard et al. (1984) holds that while emotion and cognition are interdependent, emotion processes and cognitive processes have a significant degree of independence. According to him there is a heuristic advantage in maintaining a distinction between emotion as one feels it and experiences it in consciousness and the accompanying cognitive processes in consciousness, which one does not feel. Therefore emotion at the conscious level is a special kind of awareness that generates motivational cues for cognition and behavior and provides a sense of attachment and engagement with the social and physical world.

Cognitively oriented theories hold that emotions change as a function of cognitive development. Yet, it is the invariance of the event-emotion, emotion-cognition, or emotion-behavior relationships that is referred to here. That is, all three follow a developmental course; they are the subject matter of emotional development.

Differential emotions theory suggests that there is indeed an interfacing of emotions and developmental processes and that there are well-organized developmental processes in the biological, social, and experimental-motivational domains. They propose that the quality of a given emotion feeling is as invariant as the processes that

determine sensory pleasure and disgust and that emotion feelings like sensory pleasure and disgust are essential for the effective operation of the cognitive and motor systems (cf., Izard et al., 1984).

Piaget further adds that hedonism (pleasure or luxury) plays a fundamental role in the acquisition of habits in general (cf., Piaget, 1981a). This author labels the acquisition of habit "learned behavior," the process whereby one's mentalistic structure, through cognitive processes, adopts unto itself a predilection: a feeling or idea which inclines one to make choice or judgment without forethought or a distortion of one's judgment owing to a prepossession (Webster). Will is the determinant of judgment.

The Will. The will is often referred to by psychologists as "volition." Yet, its concept often comes into disrepute by them. According to Koteskey (1983) and Crapps (1986) this trend of thinking occurred by the mid-nineteenth century and is still the case today. The term was abandoned, that is, it was not included in most psychological works during this period. May (1969) says that authors of earlier works might have thought about a fate determined by will, but now it is more fashionable to think of the repressed mental life. Wheelis (1956) says that the "unconscious" is heir to the prestige of will (e.g., Crapps, 1986).

The reason for the abandonment of will was philosophical in nature. People were seen as being controlled rather than as being in control; choice was illusory (e.g., Freud, 1948; Skinner, 1971). Because one could not make choices one was not responsible for one's actions. Freud's analysis of the will was as follows:

There is within you a deeply rooted belief in psychic freedom and choice,...it is quite unscientific, and...it must give ground before the claims of a determinism which governs even mental life. (Freud, 1948; cf., Crapps, 1986, p. 255).

Thus Freud portrays people as completely driven by forces beyond their control, will, and decision (Crapps, 1986). Crapps (1986) says that May's evaluation of Freud's formulation of a new image of "willing" person shook to the very foundation Western man's emotional, moral, and intellectual self-image. He believes that "Freud correctly diagnosed a concept of unconditional will as inadequate, but he over stated the case when he completely ruled out possibilities of freedom and choice" (p. 255).

Thus, the basis of any discussion of volition is the principal issue of human freedom. Before the advent of scientific psychology, will was defined as an independent faculty that enabled people to determine their own destiny with no outside influence. "But psychoanalysis and behaviorism have long since eroded the naive assumption that behavior is independent of countless drives...and impulses coming from unexpected places" (Crapps, 1986,

p. 255).

According to Myers (1978), behavioral scientists tend to emphasize either environmental or personal control, one at the expense of the other. A vast area of psychology has chosen to avoid answering pertinent questions relating to human's will by eliminating choice and decision and substituting instead mechanistic and deterministic models (Crapps, 1986). Myers (1978) says that the question of will is more than a philosophical issue; it affects which human potentialities will be cultivated and which will not.

In an integrative model of cognition, humans are holistic beings, an example is how they organize knowledge: (a) they learn (experience) knowledge; (b) they learn (experience) knowledge negatively or positively, this is to say that knowledge and a negative or a positive emotion are associated (connected in a thought, meaning and/or idea); (c) they learn (experience) an approach or avoidance intention (a determination to act) towards such knowledge, this is to say that knowledge and an approach or avoidance intention are associated. Knowledge and meaning are not synonymous; this author believes that meaning is the result of data analysis, i.e., the culmination of the analysis of all the data in one's mentalistic structure.

Lefrancois (1988) defines "declarative knowledge" as "consisting of all the facts we have learned, all the experiences we have had... knowledge involves knowing that

something is the case' (p. 79-80). Concepts are formed by generalizations from particulars. Knowledge is appraised as good or bad based on the receptor's religious belief, world-view, culture, and so on. Piaget (1981a) says that perceptual activity involves choice and pleasant or unpleasant feelings. The behaviorist Skinner (1971) does not agree.

Skinner perceives humans as largely helpless victims of operant conditioning: free choice is impossible because all behavior results from interaction between genetic inheritance and experiences with the environment. He says that "freedom" and "dignity" in the sense of liberation from conditioning are only illusions; the best freedom humans can hope for is the proper management of determining forces for human beneficence. Crapps (1986) also argues that man is not entirely free to choose, yet he is not an extremist like Skinner.

Ranks (1950) regards will as a life force that has been dampened both by overly moralistic religion and by psychoanalytic subjugation of it to the unconscious. He believes that will plays an important and necessary role in therapy.

Pugh (1976) has a physiological (e.g., an organism's healthy functioning) explanation for will. He rejects the extreme definitions of the term as a metaphysical entity presumed to exercise ultimate control over human behavior



or as an essentially predictable personality system that follows deterministic laws. He adopts the value-driven decision system, which is between traditional extremes. Guided by primary and secondary values, the "decision system" considers alternatives and makes choices: The individual decides which alternative to select. This is "choice" by virtue of its operation using decision criteria.

Pugh's (1976) definition of choice is different from romantic or idealistic "freedom" because the brain does not select its own primary value system, it is innate. He concludes that the affirmation of free will corresponds better with reality than does its denial. Notwithstanding, he admits that the will can be short-circuited by powerful and sinister forces that make people neurotic and even psychotic (cf., Crapps, 1986). (This author believes that people can and do exercise will. Although they do not have "absolute" freedom of choice, this does not nullify the capacity to choose.)

Before and during the mid-twentieth century, James (1890, 1956) argues for the affirmation and importance of man's free will. According to him, will adds to cognitive and affective aspects of behavior the important dimension of commitment (cf., Crapps, 1986). Today, Koteskey (1983) agrees with James.

He says that people can make choices and are

responsible for the choices they make. Because Adam was made in the image of God, he had the capacity to choose and "The most important choice is for or against God" (Koteskey, 1983, p. 181). Cognition, especially a willing commitment, is necessary for a permanent change in behavior. "To discuss will is to contemplate a level of behavior in which individuals decide among the options they will follow amid counterpressure from their own impulse or from the environment" (Crapps, 1986, p. 254). Koteskey along with James (1890) believe that man's intellect, will, and behavior are interrelated.

According to Crapps (1986) the will operates within the parameter of the possible options. Hampshire (1969) puts it this way: there are can-possibilities and will-possibilities: a can-possibility is the ability to accomplish an action; a will-possibility is the desire to act in a particular way (the intention to do something; cf., Crapps, 1986).

Allport (1960), May (1969), and Farber (1966) acknowledge the presence of causative forces, yet conceive intention to be the seat of the will, the heart of consciousness, and the essence of the human capacity to form, mold, and give direction to experience. Allport (1960) says that people--in all that is distinctive of the species--are creatures of intentions (cf., Crapps, 1986).

Crapps (1986) says, "Will as the intent to carry a

decision to completion cannot be reduced to any other facet of human activity" (p. 29). In the human experience there is a strong connection between feelings, wants and action tendencies (e.g., Arnold, 1960; cf., Crapps, 1986). Individual feelings have their implications for action. "Cognition is obviously related to cognitive motivation" (Koteskey, 1983, p. 225).

The experiencing of an emotion establishes a set of desires, hopes, demands, and expectations that the individual then seeks to satisfy by action (Greenberg, & Safran, 1987). Here the author would like to emphasize emotion's ability to influence will and behavior. She notes that experiencing emotion establishes emotions, which in turn affect behavior.

According to Wadsworth, for Piaget the will is a permanent scale of values constructed by the individual, it assumes the role of regulator (self-regulation). It is the regulator of affect and is the mechanism by which values are conserved (the ability to maintain constancy in the face of logically irrelevant change). He says that "the affective analogue of intellectual operations is found in the will" (Wadsworth, 1984, p. 126).

In cognitive activity, conflicts between perceptual experience and logical reasoning are regulated through conservation. There are several factors that prompt the development of the will: the demand for social experience,

reinforced behavior, and the fact that affective experiences and feelings are conserved (cf., Wadsworth, 1984). Here Piaget has associated perception, intellect, affect, will, and behavior. He holds that the will has a propensity towards one's value system; which is learned. This author holds that "conservation" does not merely imply the logical; that which is conserved is deemed good and/or necessary by the individual.

Koteskey (1983) says that psychologists have done little to ascertain the influence of perception on motivation. According to the "cognitive consistency" theory, people behave in such a way as to have the greatest consistency in their thinking and to avoid anything that would result in inconsistency. Festinger (1957) developed the cognitive dissonance theory which says that when people have nonfitting or illogical thoughts, pressure arises to reduce the dissonance.

Koteskey (1983) believes that people are rationalizing beings who attempt to appear rational to themselves and other. Those who hold to the consistency theory believe that there is a basic drive or motive for people to maintain this state of consistency within their thinking.

Leventhal (1984) says that the conceptual processing system, in addition to verbal conceptualizations, forms "performance conceptualizations," which are abstract sequential representations of perceptual or motor

responses. These allow the volitional system to swiftly generate a sequence of voluntary responses to match spontaneous expressive outputs from the schematic and perceptual motor system. Therefore, the anticipation of emotional behavior is possible.

As a result, emotional control can be achieved indirectly by exercising voluntary actions that alter emotional feelings and responses. This "performance component" of the conceptual system plays an important role in emotional life through the volitional production and control of emotional reaction. Here Leventhal has associated the volitional, cognitive and somatic components, along with the ability to become habituated. Also, he says that labeled behavior has the innate ability to influence other components of cognition. (This author believes that labeled behavior affects all the components of cognition.)

#### The Use of Knowledge

Overt or covert behavior which has been labeled or named is referred to as "labeled behavior," such as kinesthetic and expressive movement, facial expression, and the like. Theories of emotion consider the kinesthetic feedback from muscular acts to be the basis for the representation of affect. In order for this feedback to become representational, the kinesthetic and proprioceptive

(stimuli produced within the organism by movement in its own tissues, as in muscle sense) information must be encoded and processed by the individual the same way as other information that comes through the senses. This concept is included in all theories of emotion. Current research postulates that affect influences cognition at the level of "experience" (cf., Izard, 1988).

In Zajonc and Markus' (1984) discussion of the interface of affect and cognition they state the following: There are two overlapping classes of recent theories of emotion: the cognitive and somatic. In both theories the motor and somatic processes are important elements in the generation of emotion. Therefore, all the theorists who have written on the link between cognition and emotion maintain that emotion has both a cognitive and a somatic component (cf., Greenberg & Safran, 1987). Both of these theories lead to similar conclusions about the nature of affective representations.

The "cognitive theory of emotion" invokes cognition (cognitive processes) as a necessary factor (e.g., Lazarus, 1966; Mandler, 1975; Schachter & Singer, 1962; cf., Zajonc & Markus, 1988). In this theory the motor system and expressive movements do not figure as significant elements. Yet, in the "somatic theory of emotion" these elements are central (cf., Zajonc & Markus, 1988).

Somatic theorists consider cognitive processes to be

involved in the generation of emotion, yet for them somatic processes play a more prominent role, i.e., than the motor system and expressive movement (e.g. Ekman & Friesen, 1975; Izard, 1977; Leventhal, 1980; Tomkins, 1962, 1963; cf., Zajonc & Markus, 1988).

The cognitive theorists seek to explicate the subjective manifestations of emotion. Their concern is with the emotional experience and with the phenomenology of emotion. The somatic theorists attempt to describe the expression of emotion and to explicate the perception of emotional expressions. They are also concerned with the universalities of expression of emotion and seek to identify and classify various emotional expressions and forms (cf., Zajonc & Markus, 1988).

Cognitive theorists assume that representation of affect is "imposed" by the individual. One may construe representations of emotions by combining perceptions of internal states with those of external events. A person's perception of behavior also helps construct representations of affective states (cf., Bem, 1965; Zajonc & Markus, 1988).

According to the somatic theory of emotion, the representation of affect derives principally from kinesthetic and proprioceptive feedback that is generated by emotional arousal. "Representation of affect" is somewhat abstract in both theories (cf., Zajonc & Markus,

1988). Nevertheless, this author believes that both the cognitive and somatic components of cognition are equally important.

According to Neisser (1976), behavior is based on information. Perception and behavior are controlled interactively, and their course depends on the individual as well as the environment.

According to Greenberg and Safran (1987) behavior evokes emotion. During certain clinical processes, various activities produce kinesthetic feedback, which cue specific emotional schemata

It is not the deliberate expression of emotion that produces the experience of emotion. Rather, by engaging in a deliberate performance, a person can trigger motor memory and sensorimotor cues, which will in turn activate emotion schemata to which they are linked. (p. 244)

Recent researchers all agree that emotion has a cognitive as well as a somatic component. The importance of somatic processing in emotion has been clearly demonstrated:

...the emotional system has been shown to be a complex one, consisting of interdependent parts involving at least preverbal, expressive-motor, as well as conceptual, linguistic components. (Greenberg & Safran, p. 127)

Greenberg and Safran (1987) suggest that for research purposes it is allowable to separate emotion, cognition, and behavior, but it is important not to lose sight of their complete interdependence in real life: "Emotion, cognition, and action are thus complementary aspects



of human functioning" (p. 145).

Accordingly, memory, cognitive organization, and learning all affect the total emotional experience. Emotion, cognition, and action are completely interdependent. "...they integrate to form totalities that produce conscious meanings; these, in turn, feed back and influence further the person's feelings, thoughts, and behavior (Greenberg & Safran, 1987, p. 148). This author holds the same belief, i.e., according to her definition of cognition, all the components of cognition are interdependent and interrelated.

"There is no affective behavior and cognitive behavior. Behavior is always both" (Piaget, 1954, p. 67). Affect and cognition are inseparable and there is no thought without emotion and no emotion that occurs without cognition: the one is irreducible to the other (cf., Eisenberg, 1986). "Affective life and cognitive life, then, are inseparable although distinct" (Piaget, 1947, p. 6).

Both Bandura (1978) and Wachtel (1977) have discussed the continuous interplay and reciprocally determining relationship between cognition, overt behavior, and environmental input and feedback. According to them cognitions play a major role in determining one's actions, and the consequences of these actions feed back to influence one's cognition. Cognitions are influenced by

the environment: they interpret and provide meaning to it and lead to actions that alter aspects of it (cf., Greenberg & Safran, 1987).

Perception depends on a variety of factors: emotional states, physiological state, past experiences, and so on. It is not solely dependent upon stimulus properties alone. Candland (1977) states that emotional experience varies with the stimulus, and that the perception of the stimulus varies with the emotional experience (cf., Greenberg & Safran, 1988). It is very clear in all the above statements that labeled behavior is not an isolated involuntary act, it involves the whole person.

The wholeness of personhood is an important concept.... How may anything be understood with precision without breaking the whole into its constituent parts? But...because of the necessity to separate in order to analyze, the discipline must continuously remind itself that the whole is more than the sum of its parts. (Crapps, 1976, p. 29)

### The Increase of Knowledge

Memory and sensation are closely related; sensation is discussed a little later. Memory is an intellectual process closely associated with both learning and cognition. According to Piaget (1981), the term can be as broad and as general as learning itself; it is identical with the organization inherent in any cognitive structures. 'Every conceivable aspect of learning could be theoretically explained as a direct effect of memory

(Furth, 1981, p. 118).

What is learned is remembered. All learning and thinking involves memory. According to Eysenck (1984) memory (the storage and retrieval of information) is both systematic and interdependent. Thinking involves manipulating cognitions remembered about the past. Anatomical and physiological changes take place in learning so that what is learned can be remembered. According to Koteskey (1983) man's capacity to remember is one of his God-like attributes. Without memory, every experience would be completely new. One would have to learn the same information over and over again.

Sensation and perception affect what enters the memory while learning and cognitive processes involve "storage." Much of what is called learning and cognitive processes seem to be the processing of information so that it can be permanently stored and not forgotten. The memory and storage of learned information is permanent and remains in storage throughout a person's life. One's storage capacity never gets full; once information is stored, under normal conditions, it can be retrieved (cf., Koteskey, 1983). Piaget has set forth a theory of storage which includes several components of cognition.

Piaget believes that affect and cognition are "fused," and that they are indissociable, in that, affectivity speeds up or slows down intellectual functioning without

modifying the structures of intelligence. He refutes the idea that affectivity changes intellectual structures and is therefore a source of new knowledge. Nevertheless, many theorists believe that affect causes developmental growth (cf., Eisenberg, 1986; Piaget, 1981a).

Piaget says that affect includes feelings, drives or tendencies including "higher tendencies" such as the will, but it does not create new structures (the will is only a regulation of the elementary regulations constituted by feelings). However, affective factors are involved in the most abstract forms of intelligence and intellectual elements are increasingly included in complex feelings (cf., Piaget, 1981a).

Cognitive and affective factors are in the most general characteristics of behavior such as adaption, assimilation, and accommodation.

The affective aspect of assimilation is interest, defined by Dewey as assimilation to the self; the cognitive aspect is understanding. Accommodation in its affective aspect is interest in the object as much as it is new. In its cognitive aspect, accommodation is the adjustment of schemes of thought to phenomena. (Piaget, 1981a, p. 5)

"All behavior is adaptive and all adaptation is the establishment of equilibrium between the organism and its environment" (Piaget, 1981a, p. 4). The demands of social experience encourage consistency and continuity. Behavior that has continuity is reinforced and that which is inconsistent is not. Therefore, "At any given moment, the

affective past--now represented in memory and the present--is a part of affective reasoning" (Wadsworth, 1984, p. 127). At this junction, the affective experiences of the past can not be disregarded (cf., Wadsworth, 1984).

Campos and Barrett (1988) say that today's psychologists are beginning to realize that the elicitation of emotion has less to do with discrete properties of stimulation and more to do with how the individual relates past, present, and future events to goals and strivings. This has led to major revisions of their understanding of cognition and emotion.

A special class of cognitions--those that monitor the relationship between events and the organism's goals--now seems to be the key to understanding both the elicitation of emotion and its specific quality. (Campos & Barrett, 1988, p 234)

Self regulatory processes are best approached in terms of affective-motivation which can be seen to extend beyond the traditional response-oriented domain of emotion, influencing a variety of perceptual and cognitive processes as well (cf., Derryberry & Rothbart, 1988). "Any awareness of past and present feelings can lead to different affective decisions other than an awareness of only present feelings" (Wadsworth, 1984, p. 127). Therefore, retrieval and conservation are possible because information is stored and intelligence is increased. Therefore, change constitutes an increase in knowledge which constitutes an increase in intelligence.

Biologically intelligence is outlined in terms of growth, stages, adaptation, equilibrium, and such. These processes are simply ways of interacting with the environment, they do not change with stages of intellectual development. They are invariant functions.

Epistemologically, intelligence is outlined in terms of content, structure, and function. What does change is activity itself. "Development, then, does not consist of changes in function,...but consists instead of changes in behavior" (Lefrancois, 1988, p. 182).

Because behavior changes, it is inferred that the properties of intellect that govern behavior must also change, i.e., structure. Structure changes because the individual functions in relation to the demands of the environment. According to Piaget there are four components which comprise a representation of intelligence: behavior, structure, function, and environment (cf., Ginsburg & Oppen, 1979; Lefrancois, 1988; Piaget, 1981a).

Thought is the manifestation of content, all species inherit two basic tendencies of invariant factors: adaptation and organization. Organization is the tendency for all species to systematize or organize their processes into coherent systems, physically or psychologically. All life integrates these structures into higher-order systems of structures.

Intellectual adaptation is an interaction or exchange

between the individual and the environment, and also involves assimilation and accommodation. The individual incorporates or assimilates features of external reality into the psychological structures; this individual also modifies or accommodates psychological structures to meet the pressure of the environment (Ginsburg & Oppen, 1979; Lefrancois, 1988; Piaget, 1981a).

Both Piaget and Neisser believe that individuals modify their psychological structures or schemas as they receive incoming sensory data. Neisser puts it this way:

The schema accepts information as it becomes available at sensory surfaces and is changed by that information; it directs movement and exploratory activities that make more information available, by which it is further modified. (Neisser, 1976, p. 54)

(This author holds that, normally, one's repertoire of information increases with experience, which naturally increases one's capacity and ability to reason; she does not hold that sensory data are changed as a result of accommodation or assimilation; incoming information is merely integrated into existing (mentalistic) structure(s), which causes these structure(s) to transform (increased data). Piaget postulates that humans have the power and ability to create or manipulate their own cognitive structures or apparatus, I do not [see Figures 1a, 1b and 2]). Environment is a determinant of the make-up of one's mentalistic structure; one experiences only the environment to which one is exposed and with which one interacts,

keeping in mind that perception and the other cognitive components are interrelated and fused.

"In psychological assimilation viewed from the cognitive perspective, objects are incorporated into forms or schemes of behavior" (Piaget, 1981a, p. 4). Therefore, assimilation may be perceptual, sensorimotor, or conceptual. In "perceptual assimilation," objects are perceived relative to existing perceptual schemes. Neisser (1976) says each schema (of which there are thousands) has its own cognitive map which is attached to and stored with it. For Piaget,

...conceptual assimilations are those where a new object is conceived or understood because it is incorporated into forms or structures of internal action or thought.... they are assimilated into the systems of mental operations that the subject has constructed. (Piaget, 1981a, p. 4-5)

Schwartz and Trabasso (1988) and Masters and Carlson (1988) have recently done research in the area of information processing among children and adults. Schwartz and Trabasso (1988) found that in adult-child comparisons, those distinctions adults find the easiest to make are also the ones children master first in development; i.e., the positive versus negative valence. This valence distinction is most clearly made by the age of 6. The direction distinction toward/away or active/passive are next most easy and show a small development increase. The most difficult dimension, for both adults and children, is the



reference distinction; i.e., self/other or internal/external. This latter distinction improves with age (they are suggesting this is the natural order of valence).

Masters and Carlson (1988) found that young children know the differences between emotions. However, with age, there are systematic changes in their understanding of emotional situations that appear to reflect increasing experience, changing socialization pressures, and growing cognitive and social sophistication. There is also evidence that adults nominate appropriate determinants of emotion in children.

The expectancies of both children and adults are not always accurate concerning the likely consequences of ongoing emotional states. Children's expectancies are not as pervasive as those for the emotional consequences of experience, and their accuracy is not particularly high. The consistency and accuracy of adults' understanding of the consequences of emotion appear to be greater than that of children.

Greenberg and Safran (1987) say that in the creation of new meaning, the process is less the searching for an unacknowledged emotion than it is a process of generating new symbols and concepts based on one's current experiencing. An important issue is that this is a creation that is occurring in the moment by an interaction

between experience and concept.

It is not a process of moving from concept to concept by reasoning or inference, but rather a process of moving between concept and experience in a circular and ongoing process of explication and creation of meaning. (p. 195)

The process of creating new meaning occurs within meaning domains. These domains refer to a store of experimental knowledge in a specific content area, which the person has developed with experience and reflection (cf., Leventhal, 1982). Therefore, the experience of recognizing these domains or specific content areas can be part of the process of creating new meaning (cf., Greenberg & Safran, 1987). This author holds that the above findings adequately support her postulate of an increase in knowledge as opposed to evolutionary concepts such as adaption. According to evolution, adaptation is the process whereby organisms or persons, through an act of nature, evolve. When this concept is applied to human cognition, it results in higher mental processes among human beings. I hold that cognition (the acquisition, organization, and use of knowledge) is the same for all human beings, and that functionally, all its components comprise this process.

## PART II THEOLOGY

### Introduction

This section begins with a word study of what I believe to be a biblical definition of cognition. In it, I set forth the idea that, within Scripture, God has revealed a mental picture of human cognition and its processes. What I have endeavored to do is put this picture on paper in diagram form. In this same study, I have developed what I believe to be biblical levels of intellectual development (see Figures 1a, 1b, and 2). (As stated previously, I define intellect as one's ability to use stored or analyzed data.) It is important for the reader to note that the passages of Scripture which I have initially drawn from relate to the time of the fall. I assert that although man has fallen, human cognition and its processes have remained the same, and as far as I know, there is nothing in Scripture which tells us differently, i.e., that human cognition changed as a result of the fall, only that sin entered into personal being (Gen. 3:22; Rom. 5:12). Also,

I hold to a "fiat" creation, i.e., God spoke and man was created. Man is not, and never has been, in the process of evolving. Notwithstanding, he was created with certain potentials, capacities, and abilities, one of which is the capacities to house a sin nature.

In this dissertation I focus mainly on evolution,

particularly Darwinian evolution. I do so because it has had such a great impact on Western thought and because it requires a complete reinterpretation of the human being's spiritual role in creation (Bowler, 1983).

The only possible way to accept the evolutionary link between man and the animals, yet preserve a spiritual component in human life, is to treat evolution itself as a spiritual as well as a material progression. (Bowler, 1983, p. 8)

Thus, the human being's sense of purpose can be found in nature. Nevertheless, Bowler (1983) says that the events of the Darwinian revolution began long before Darwin was born. Therefore the ideas and concepts housed in his theory are not new. The model set forth in this study is biblically based, therefore I consider it to be a biblical picture of human cognition and levels of intellectual development. Also in this section, I intervene periodically for the clarity of my own position. All the Bible references are taken from the King James Version unless otherwise stated.

#### Secular vs. Biblical Definitions of Cognition

Most psychologists define cognition as the activity of knowing; the acquisition, organization, and use of knowledge (Neisser, 1976, p. 1). A Biblical definition includes a fused, cyclical, interrelationship between the cognitive components which are the senses, intellect, emotion, will, behavior, and stored knowledge. Acquisition involves the senses; organization involves intellect,

emotion, and will; behavior involves action; and an increase of knowledge involves storage. Cognition also functions reciprocally with the real world.

### **An Application of Biblical Cognition**

The following Scriptures address cognition as it has been defined by both secular and biblical authors. The Bible also addresses Adam and Eve's cognitive processes in terms of perception, intellect, emotion, will, behavior, and stored knowledge. The following Scriptures and applications delineate and/or expound on these processes.

#### **The Real World**

And the Lord God took the man, and put him into the garden of Eden to dress it and to keep it. And the Lord God commanded the man, saying, Of every tree of the garden thou mayest freely eat: But of the tree of the knowledge of good and evil, thou shalt not eat of it.... (Gen. 2:16-17)

#### **The Acquisition of Knowledge: The Senses**

**An individual receives data from the real world through the senses.**

And when the woman saw that the tree was good for food, and that it was pleasant to the eyes, and a tree to be desired to make one wise, she took of the fruit thereof, and did eat, and gave also unto her husband with her; and he did eat. (Gen. 3:6)

In this verse, the literal sense of the verb saw is seeing with the eyes, but in the extended and metaphorical sense, the senses include to regard, perceive, feel, understand, learn, and enjoy; to be seen or to reveal

oneself; to cause to see, show, make to see, to be shown; and to look at one another. An individual also "perceives" through the senses: with one's eyes one can discern (Prov. 7:73) and with one's ears one can understand words (Prov. 29:19); understanding can also be said to feel (Ps. 58:10) and discernment can be sensed through taste (Job 6:30). Therefore, Eve saw the tree both physically and in an extended sense; she literally saw it and perceived something about it.

The word when is used to introduce a given which is the result of some other fact or action: When Eve saw that the tree was good for food and pleasant.... In this passage, the word good refers to practical or economic benefit. It also refers to "good in one's eye" to express preference or will. The word pleasant has the meaning of desire, longing or lusting, extending to both good and bad objects. Here perception (the senses) can be seen as related to other cognitive components (cf., Harris, Archer, & Waltke, 1980; Strong, 1984). It also appears that this is a fused relationship because these actions occur simultaneously.

### The Organization of Knowledge

The Intellect. Eyes (ayin) can mean the literal or spiritual eye. In regards to intellect, it refers to intelligence or understanding. In Gen. 3:6 more than the

literal eye itself is implied. Occasionally this word represents the whole process of seeing and by extension, of understanding and obedience. In the Old Testament it is used to express knowledge, character, attitude, inclination, opinion, passion, and response. The eye is a good barometer of the inner thoughts.

The eyes are depicted as spiritual faculties. After eating the forbidden fruit, the eyes of Adam and Eve were opened. They had lost their innocence: being aware of their nakedness both physical and spiritual (cf., Harris et al., 1980; see Figures 1a and 1b).

The Emotion. In Gen. 3:6 desired speaks of delight in, to be pleasant, covet, or to lust after. (In a positive context it refers to the less ambiguous delight.) Eve desired wisdom or prudence.

To be wise is to understand or prosper. It relates to an intelligent knowledge of human reason. It is the process of thinking through a complex arrangement of thoughts resulting in a wise dealing and use of good practical common sense (cf., Harris et al., 1980; Strong, 1984).

The Will. The will or volition can be presented as a mental act, directed towards a free choice, also it can be motivated by desire pressing in from the unconscious. Boulomai is originally volition as a mental act and

thelo is originally instinctive drives. The meaning of the two words very early overlapped. Boulomai is to will, wish, want, or desire. Boule is to will, resolve, or purpose. It also refers to the weighty pre-consideration which precedes the effecting of the will. Boulema is to will, intention, or purpose (cf., Harris et al., 1980).

In the above verses, God and Adam and Eve's environment are the real world. The pre-considerations which Eve is faced with are her perceptions of the real world, her previous knowledge about God, His spoken word, temptation, her personal desires, and such. She makes a conscious volitional decision (choice) to disobey Him. This decision is a mental act, but is manifested through her taking and eating from the forbidden tree.

Adam and Eve exercised their will (free choice) in their disobedience to God. Eve took the forbidden fruit, ate of it, and gave it to her husband. Although took means to take, receive or to lay hold of, the emphasis here is on its widest application which is to accept (cf., Harris et al., 1980; Strong, 1984).

#### The Use of Knowledge: Behavior

Eve took (to lay hold of) the fruit and both she and her husband ate it. They also sewed fig leaves together and made themselves aprons. These actions were directly related to what had just previously occurred.



### The Increase of Knowledge

#### Storage: The Ability for Knowledge to Increase

According to Botterweck (1986) the heart is the seat of memory and makes it possible to incorporate particular apperceptions into a larger realm of experience (Deut. 4:9; Isa. 33:18), providing the basis for judgment and responsible action with respect to what is perceived (Josh. 14:7).

Both Botterweck (1986) and Harris et al. (1980) say that the knowledge of good and evil, i.e., the ability to distinguish between them, is beyond the capacities of immature children, because they cannot yet judge the consequences of what is involved (see Figure 2, Biblical Levels of Intellectual Development; cf., Deut. 1:39; I Kings 3:7; Isa. 7:15f; Jer. 4:22).

A child cannot distinguish between the left and the right hand (John 4:11) nor between good and evil. In Isa. 8:4 a similar verse indicates a child's inability to distinguish what is beneficial and harmful. However, such knowledge is available to adults.

According to Eccles. 1:18, one's capacity for knowledge can increase (multiply): this type of knowledge is gained by experience and is also the contemplative perception possessed by the wise man (Prov. 1:4; 2:6; 5:2). It seems to be saying here that one's ability and stored

knowledge increases with one's experience, i.e., experience is the source of both these attributes.

### The Intellect

And the eyes of them both were opened, and they knew that they were naked; and they sewed fig leaves together, and made themselves aprons.... And the Lord God said, Behold, the man is become as one of us, to know good and evil.... (Gen. 3:7, 22)

Before the fall, Adam and Eve knew only good (Gen. 2:31; 3:22). After the fall they knew evil also. This newly acquired knowledge was the result of their eyes being opened.

In Scripture when the opening of the eyes is referred to it mostly refers to God as the subject of the verb. Only in II Kings 4:35 does open refer to the opening of the eyes in a physical miracle. So in this instance God opened the mental eyes of Adam and Eve and they knew both good and evil, although the capacity for them to know both was there before the fall and the test. After the fall they knew in a cognitive sense that they were naked (see Figures 1a and 1b).

The word naked before the fall refers to nude, practically or totally. After the fall it signifies the knowledge of their physical or spiritual nakedness. It indicates more than sex consciousness, it depicts their awareness of their guilt. Their relationship with God had been impaired, thereby upsetting their relationship with

each other.

The word knew used here is the Hebrew root word yada, which means "to know." This root occurs a total of 944 times in Scripture. It is used in every stem and expresses a multitude of shades of knowledge gained by through the senses. It is used for human as well as animal knowledge. This type of knowledge distinguishes between good and evil; Adam and Eve gained their knowledge of evil as a result of disobeying God: they became both physically and spiritually aware of evil.

Very seldom in the Old Testament is become used to denote either simple existence or the identification of a thing or person. It means to become + (plus) altogether become accomplished: an emphatic continuous state. It came to pass that Adam and Eve knew good and evil in a continuous state.

In the moral and religious realm evil denotes activity that is contrary to God's will (cf., Harris et al., 1984; Strong, 1980). Adam and Eve became aware of their sin (evil) and took crafty counsel, accordingly, they were prudent in making aprons.

In a positive sense apron means prudence and in a negative sense it has shrewd connotations. It can be contrasted with being skillful or wise, which is always positive. Adam and Eve acted craftily and were ready to do

anything (cf., Harris et al., 1984; Strong, 1980).

### The Emotion

Before the fall Adam and Eve knew only one primary emotion, good (Gen. 3:5). According to Gen. 3:22, which is after the fall, they had acquired the knowledge of evil, i.e., they now knew two primary emotions, good and evil. This presumes that before the fall they knew only good emotion: Before the fall, Eve based her knowledge of "the tree of good and evil" on her passed experience or stored knowledge which at that time entailed only good (Gen. 3:6; Gen. 2:16, 3:2). After the fall, the emotions Adam and Eve experienced were both good and evil; they felt nakedness and fear.

Adam and Eve were afraid of God. The biblical usages of fear (afraid) are divided into five general categories: (a) the emotion of fear, (b) the intellectual anticipation of evil without emphasis upon the emotional reaction (e.g., David's recognition while in Achish's court that his reputation was a danger to him, I Sam. 21:13), (c) reverence or awe (e.g., a motivational fear conducive to with righteous living, Deut. 31:11-12), (d) righteous behavior or piety (e.g., seen in one's kindness to the stranger, Deut. 10: 18-20), and (e) formal religious worship (e.g., the Northern Kingdom worshiped God in fear, II Kings 17:32-34).

After the fall, Adam and Eve were conscious of evil in a physical as well as emotional sense; they were capable of experiencing both the physical and spiritual pain of it. (Fear occurs when the heart "deserts" its owner [Ps. 40:12]).

Adam and Eve experienced both guilt and fear. After the fall they were afraid and reverentially feared God. Accordingly, they dreaded facing Him. Adam told God "I heard thy voice in the garden, and I was afraid, because I was naked, and I hid myself" (Gen. 3:10; cf., Harris et al., 1980).

### The Will

As a result of knowing evil, Adam and Eve became continuously aware of two choices: to obey or disobey God (good or evil). The decision that something is bad/evil or good/righteous depends subjectively on one's view (vision), the root of ra'a (evil) frequently occurs with the formula "in the eyes of." This root can have either passive or active connotations. To be bad or evil has a dual meaning of being wrong in regard to God's original and ongoing intention and detrimental in terms of its effects on man. It can refer to injurious effects on man, either as physical or emotional harm to the person or painfully unpleasant experiences.

There are practically no philosophical or metaphysical

connotations that bear upon theodicy (a vindication of the justice of God in permitting evil to exist) or cosmology. The verbal forms of the root (ר') are basically descriptive of the interrelations between God and man and between man and man. In this instance Adam and Eve exercised their will to hide from God, they hid themselves from Him secretly (cf., Harris et al., 1984; Strong, 1980). The Scripture and all the above actions of Adam and Eve painted a picture of human cognition in my mind, and this is how I have delineated and diagrammed it (see Figures 1a, 1b, and 2). The Biblical Levels of Intellectual Development (see Appendix B) are mostly the results of a word study. The following is additional information gleaned from a word study on biblical cognition and levels of intellectual development, but relating particularly to the latter.

#### Additional Information

##### Intelligence

The word intelligence (bin) means to understand, consider, perceive, have prudence, and regard. It means to discern between good and evil (I Kings 3:9). It is the type of distinguishing that leads to understanding.

This verb refers to knowledge which is superior to the mere gathering of data: it is necessary to know how to use the knowledge one possesses. The verb yada (to know) can

also mean understanding in the sense of ability. It can also mean to be perceptive (Ps. 73:22). However, it generally describes the process whereby one gains knowledge through experience with objects and circumstances. Bin is a power of judgment and perceptive insight and is demonstrated in the use of knowledge. Thus, it is possible to hear without perceiving.

Yada is also used of one's relation to the divine, an acquaintance with. Understanding does not come automatically. The possession of it requires a persistent diligence. It is more than IQ; it connotes character (cf., Harris et al., 1980). The heart is very crucial to this study, since human cognition is located in it, used interchangeable as it, and is inseparable from it.

### The Heart

Used as an idiom, leb (heart, understanding, mind) means to think about or to want. In the abstract sense, heart becomes the richest biblical term for the totality of human inner or immaterial nature. It is the most frequently used term for immaterial personality functions as well as the most inclusive term for them since, in the Bible, virtually every immaterial function is attributed to the heart. (Very few uses of this word refer to the physical organ.)

The majority of the usages of heart refer either to

the inner immaterial nature in general or to one of the three traditional personality functions: emotion, thought, or will.

In referencing the inner nature, heart may contrast some relatively obscure or less visible aspects of human nature (cognitive reference) with the more public side of being (somatic reference). It may be regarded as an inner reflection of the outer person (Prov. 27:19; i.e., mind). Heart expresses the totality of a person's nature and character, both inner and outer (I Kings 8:23 RSV; Ps. 9:1). The whole spectrum of emotion is attributed to the heart, good and evil (I Sam. 2:1, Neh. 2:2).

The heart in most cases should be translated as mind or understanding. "To set the heart to" may mean to pay attention to or to consider the importance of (Exod. 7:23). Creative thought is a heart function. Wicked devices originate in the heart. Both wisdom and understanding are seated in the heart. The idiom wise heart in Kings 3:12 and Prov. 16:23 virtually becomes synonymous for such ideas as mind or sense. The heart functions in perception and awareness. It is the seat of thought and intellect. It is the seat of the will. A decision may be described as "setting" the heart (II Chron. 12:14). Not of the heart expresses not of the will (Nu. 16:28). Removal of the decision-making capacity is described as hardening the heart (Exod. 10:1). It is the seat of moral



responsibility. Righteousness is "integrity of heart" (Gen. 20:5). It is described as the seat of moral evil (Jer. 17:9). Personality dispositions may be considered as more or less permanent personality patterns (cf., Harris et al., 1980).

Starting with outward perception, the heart supports understanding and decision on the basis of what is perceived. As the seat of memory it makes it possible to incorporate particular apperceptions into a larger realm of experience (Deut. 4:9; Isa. 33:18), providing the basis for judgment and responsible action with respect to what is perceived (Josh. 14:7). It is in the heart that various objects of perception become concentrated to form insight into the true nature of the world, on the basis of which people may consciously frame their lives (Deut. 8:5; Prov. 2:2; cf., Botterweck, G. J. 1986). Brown (1971) describes the heart somewhat differently than Botterweck.

According to Brown (1971), the O.T. nuances of the heart are clearly recognizable as referring to the "whole man." In the metaphorical sense heart (leb) is the seat of one's spiritual and intellectual life, the "inner nature" (Ps. 38:10): there is a close connection between spiritual and intellectual processes and the functional reactions of the heart's activity can be clearly seen. The words heart and soul are also interchangeable in Scripture (Deut. 6:5).

The heart is the seat of emotions whether joy (Deut. 28:47) or pain (Jer. 4:19), or tranquillity (Prov. 14:29) or excitement (Deut. 28: 47). It is the seat of understanding and of knowledge, of rational forces and powers (I Kings 3:12), as well as fantasies and visions (Jer. 14:14). Folly (Prov. 10: 20f) and evil thoughts also operate in the heart.

The will originates in the heart, also the carefully weighed intentions (I Kings 8:17), and the decision which is ready to be put into effect (Exod. 36:2). Leb means less an isolated function than the individual with all urges, that is, the person in totality (Ps. 22:26, 73:26, 84:2). It is a comprehensive term for the personality as a whole, its inner life, its character. It is the conscious and deliberate spiritual activity of the self-contained human ego. (This contrasts greatly with the secular Greek use of the term which has only one function within the system of spiritual and intellectual processes.)

That which comes from the heart is distinctively the property of the whole inner man, and therefore makes him responsible for it. Good and evil thoughts dwell in the heart. It is the organ through which human, either as godly or as disobedient, meets God's word and acts. Conversions to God take place in the heart. Clearly this shows cognition to be a fused interrelationship.

### Knowledge

Yada (to know) refers to external knowledge or recognition. It is often paralleled by visual sensory perception, rā<sup>v</sup>ā (see), (Nu. 24:16ff) which often proceeds it and makes it possible (Gen. 18:21). An auditory process can also proceed yada (Exod. 3:7). (The Lord saw the affliction of His people and heard their cry; He knew their sorrows. Both elements are constitutive of the epistemic process (rā<sup>v</sup>ā [saw], sama [heard], yada [knew])). In such a parallelism yada can function as the superior term, summarizing the sensory perception and processing it intellectually.

But the verbs seeing, knowing, considering, and understanding (Isa. 41:20) do not always point to a deliberate distinction between sensory and intellectual apperceptions; more generally the totality of human knowledge is addressed. Also, one who knows must have the physical ability to comprehend (a real world experience).

The object of knowledge and perception must be fundamentally perceptible, i.e., within the grasp of the knowers: before them (Ps. 51:5; 69:20), before their eyes (Isa. 59:12), immediately with them (Job 15:9), or near them (Isa. 5:19). The normal process of perception cannot deal with things that are great (Jer. 33:3), hidden (Isa. 48:6), dark (Ps. 88:13), deep (Dan. 2:22), or new (Isa. 48:6). Certain conditions are necessary for perception

and knowledge to take place: the object must be near (Isa. 33:13) or in the midst (Neh. 4:5). Knowledge is the result of systematic searching, trying, effort, and testing (with God as the subject), and judgment. Yd can mean practical, emotional, and volitional acquaintances and concern (cf., Botterweck, G. J., 1986).

According to Brown (1971), cognition, practical knowledge and theoretical understanding are attained when the mind reflects on and judges sense experience. Aisthesis (experience) and its cognates express apprehension through the senses apart from the intellectual act of interpretation and, from the first, ginosko (know, come to know, understand, comprehend, perceive, and recognize) and its cognates include the idea of grasping and understanding the object perceived by the mind. (Originally both aisthanomai and ginosko referred to experiencing an object through the senses.)

Experience through the senses is fundamental to knowing. When this process results in an item or body of knowledge which may serve as a basis for further thought and action, oida, to know is used parallel to the prefix of ginosko. Oida is used in Rom. 7:15, Luke 18:34, and John 13:7 to express an increase or structural basis of knowledge.

The ginosko word-group is mainly to render words formed from the root yada which has a range of meanings.

Its range is as follows (see Figure 2, Biblical Levels of Intellectual Development): (a) Level I: the basic meaning is to notice, experience, observe (Gen. 3:7; 41:31); (b) Level II: then the observing of things like good and bad (2 Sam. 19:35; John 4:11) or right or left (John 4:11) leads to distinguishing between them (to distinguish between); (c) Level III: [mediating level] knowledge passed on by a third party gives the meaning of know by learning (Prov. 30:3); (d) Level IV: experience becomes a reality in a relationship based on familiarity with the person or thing known (e.g., wisdom literature: expresses a knowledge [yada] which is empirical and living, obtained by observation of the world and life as the work of God, which leads to upright living (Prov. 2:6; Eccles. 8:17)); (e) Level V: knowledge, that is familiar with a thing or situation, can result in technical ability, that is to know how to do something (I Kings 7:14; Gen. 25:27; cf., Brown, 1971; See Appendix B, Additional information on levels of intellectual development).

Observation and resultant action (or failure to act) becomes closely linked. Accordingly, ginosko also means to concern oneself with, care for, trouble oneself with, or their negatives (Prov. 27:23), and want to have to do with it or its negatives (Deut. 33:9). Knowledge not properly obtained leads to a lack of interest (Jer. 8:7, Ps. 95:10, Isa. 1:3). If one asks for the central concept which

makes comprehensible the varied uses of the one root [yada], it is to be found in the concept of cognition. All the activities listed (above) are merely variations on this (cf., Brown, 1971). In this study, this author is particularly interested in knowledge that is not properly obtained; which directly relates to the question asked in this dissertation (see Chapter 1).

### Will

Human will or volition can be represented as a mental act, directed towards a free choice. It can also be motivated by desire pressing in from the unconscious (stored knowledge). Both kinds of volition are rendered by the word-groups associated with boulomai and thelo. Boulomai is originally volition as a mental act and thelo is originally instinctive desire. When thelema is used of human beings, it can denote a wish (Ps. 107:30), the will (Dan. 11:3), and negatively "ill-will," arbitrary behavior (Jer. 23:26).

According to Ferguson, Wright, and Packer (1988), some have thought the will is confined to the power to execute what the understanding believes is best, in all relevant circumstances, to do. The only exception would be that one was hindered from doing so because of physical reasons or the compulsion of others. That is, the will chooses to accept what is pleasant and rejects what is unpleasant.

From this study it is apparent that the biblical concept of cognition entails a fused, interdependent, interrelated relationship between the cognitive components.

Keeping in mind the principles of integration, particularly that each discipline retains its own identity while benefiting from the other (i.e., theology and psychology), and that information from each field is united but not fused, one can easily see how the model set forth in this dissertation can be used to research the problem of why African Americans perceive, experience, and respond to the American educational system as they do, particularly when researched within the educational arena of schooling.

**BIBLICAL LEVELS of INTELLECTUAL  
DEVELOPMENT**

**LEVEL V  
FILLED ABILITY  
I KINGS 7:14**

**LEVEL IV  
A RELATIONAL REALITY:  
BASED on FAMILIARITY,  
EMPIRICAL, LIVING  
ECCLES. 8:17**

**LEVEL III  
INSTRUCTIONAL LEARNING:  
to GOAD, UNACCUSTOMED  
plus DILIGENTLY  
PROV. 30:3**

**LEVEL II  
THE ABILITY to DISTINGUISH  
BETWEEN GOOD and EVIL/RIGHT  
and LEFT/HARMFUL and USEFUL  
II SAM. 19:35**

**LEVEL I  
BASIC MEANING,  
to NOTICE, EXPERIENCE,  
OBSERVE  
GEN. 3:7**

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**Figure 2 Biblical Levels of Intellectual Development**



## **CHAPTER 4**

### **PROCEDURE**

#### **Research Methodology**

The purpose of this study is to begin an empirical test of the validity of an integrative model of cognition and certain assumptions made by Ogbu regarding the tendencies and characteristics of castelike peoples in the United States, particularly African Americans. I do this through the use of five self-designed questionnaires: a demographic questionnaire, Mentalistic Structures, Cognitive Components, Emotion & Education, and Black Rose Questionnaires. The procedures are discussed under the following subjects:

1. Participants
2. Distribution
3. Instrumentation
4. Hypotheses
5. Analysis of data
6. Delimitations
7. Discrete interest

#### **Participants**

The participants in the study were people of various races and ethnic groups, the highest percentage of them

being African Americans, Asians, and Hispanics. The respondents to the Mentalistic Structures Questionnaire were only African Americans. The participants for all four questionnaires were drawn at random from people within the Los Angeles and Orange county areas of California.

The instruments were given to each participant individually by a researcher. Young children were given the option of having the questionnaires read to them. Many questionnaires were distributed in public schools and Churches. All the usable instruments returned were included in the analyses for this study. With regard to each participant's and institution's right to privacy, anonymity was maintained, and the promise of this anonymity was communicated to each participant during the initial testing phase of this study.

#### Distribution

The instruments were distributed at random to people of various races and ethnic groups within the Los Angeles and Orange County areas of California. Many were distributed at random to participants in their homes or standing on the streets in the city of Los Angeles. With prior permission, many were distributed to students attending public schools by their teachers and in a Bible School in Los Angeles. Permission was solicited from several Pastors to distribute the questionnaires among

people of various age groups within their congregations; each institution was asked to supply research assistants to help administer the instruments.

### **Instrumentation**

Because of the nature of the model introduced in this dissertation, it was necessary to construct five self-designed questionnaires. Each questionnaire was tested and modified to the satisfaction of those who participated in the piloting phase of this research (cf., Wiersma, 1986, p. 288; Neuman, 1991). One of my goals was to design questionnaires that corresponded to the age level of the participants and which were not offensive to them.

Several of the questionnaires are quite lengthy, but this is expected in educational research because it covers a broad spectrum of phenomena (cf., Wiersma, 1986, p. 292-3). Additionally, most of the youth who participated in this research indicated that they enjoyed interacting with the cognitive components questionnaire, also the adults indicated that the mentalistic structures questionnaire was inoffensive to interact with, but was still a "soul searching" questionnaire. Each questionnaire was completed by the participants in 35 minutes or less.

The Mentalistic Structures Questionnaire was designed specifically to draw upon certain information within the mentalistic structures of African Americans living in the

United States. The Cognitive Components Questionnaire assessed the relationship between education and the various components of cognition; here education encompasses learning. The Emotions and Education Questionnaire assessed the relationship between emotion and education. The Black Rose Questionnaire is a meanings assessment questionnaire, designed specifically to test the respondents' responses to an objective phenomena (the black rose) in six areas: perception, intellect, emotion, will and/or behavior, and stored knowledge.

#### The Mentalistic Structures Questionnaire

My purpose for designing the Mentalistic Structures Questionnaire was twofold: (a) to test the nature of the relationship between the African American history of experience and the Mentalistic structures of African Americans today, and (b) to empirically test certain of Ogbu's assumptions regarding African Americans (cf., Chapter 2).

To construct this questionnaire I drew from mental conceptualizations found in three sources written by African American authors: To be a Slave (Lester, 1968), What Color is Your God (Salley & Behm, 1981), and A Testament of Hope: The Essential Writings of Martin Luther King Jr. (Washington, 1986). I then posed these concepts in contemporary questions (cf., Adams, 1975, pp. 164-5).

The original writings discussed the ideas African Americans held during the periods of Slavery, Segregation to Ghettoization, and Black Consciousness. In designing this questionnaire, I used only primary sources.

I designed a "key" for the Mentalistic Structures Questionnaire which corresponded to the concepts held by African Americans in the time periods mentioned above. Three statistical procedures were conducted on the collected data: (a) a correlation between the collected data (representing the responses of African Americans today) and the key (representing the mentalistic structures of the African American during the three eras), (b) a repeated measures Analysis of Variance (ANOVA) of the participants' percent of agreement with the key for each time period, and (c) correlations between the participants' mean scores and the demographic data.

An agree or disagree answer was required for each question. There were only two categories because I was measuring whether the participants believe or disbelieve the statements posed in the questionnaire, not their attitudes toward these issues.

Ogbu also makes certain statements regarding the beliefs of African Americans, beliefs about their relationship to White Americans in this country. Another of my intents was to determine whether these assertions were espoused by the participants of this study.

All of the participants in this study were chosen at random, meaning anyone qualified, because I propose that cognition functions the same in everyone. Anyone who is an African American qualified to participate in the Mentalistic Structures Questionnaire, because I hold that the content of their mentalistic structures are related due to their common heritage.

It became necessary, because of age, for the researcher to read the questionnaires to some of the participants. Nevertheless, each researcher was instructed not to give any indications of whether there were right or wrong answers to the questions, nor was he/she to use any voice inflections, gestures, etc. which would indicate anything contrary to this.

#### The Cognitive Components Questionnaire

The Cognitive Components Questionnaire was constructed to test the interrelationship between the various cognitive components. The statistical procedure that was run to test the nature of the relationships among the cognitive variables was a Correlation procedure.

Incorporated into each question is one or more of the cognitive components and a context-specific situation. This questionnaire was meant to determine (a) if there are demonstrable interrelationships among the various cognition components, and (b) if there is a perceived relationship

between the valence of emotion and learning. Another of my intents was to try to determine if at any point there was a fused relationship among all the cognitive components in this context-specific situation. I therefore was especially interested in whether there would be a context in which all the cognitive components were displayed.

### The Emotion & Education Questionnaire

The Emotion & Education Questionnaire was constructed to test the nature of the relationship between (a) emotion and education, (b) emotion and learning, and (c) emotions generated in school and emotions or attitudes about school. Correlation procedures were conducted to test the nature of the relationship among the variables as specified below.

In this questionnaire, education setting was delineated as the curriculum, instructor, administration, and students of other ethnic groups or races. Before this questionnaire was designed, I had established that there is a relationship between emotion and education (see Appendix A). The labeled emotions in this questionnaire were chosen at random from the ones listed on a pilot questionnaire. In the previous chapters I stated certain assumptions about cognition, some of which are as follows: (a) that it is related to one's experiential history; (b) that functionally, its components are interrelated; (c) that a different understanding of it is needed to help determine

why African Americans do so poorly in our schools; and (d) that emotion with its inherent valence of pleasure and displeasure affects the learning process of an individual. The five questionnaires used in this research, in various ways, were designed to address all these assumptions.

#### The Black Rose Questionnaire

The Black Rose was constructed to test (a) the interrelated relationship among the cognitive components, and (b) the accuracy of my definition of them and the labels which I have assigned them. The participants were asked to interact with an imagined objective reality, the black rose, and give a description of, or inform the researcher of their interaction with it. The statistical procedure that was run to test these relationships was a Matrix Correlation. Two underlying presuppositions were that (a) one's perception of the rose is based on stored knowledge, and (b) if this is an impossible task, then the participants will not be able to accomplish or complete it. If they do respond to the questionnaire, then I will assume that these actions are indeed possible, and did occur at the moment they interacted with the questionnaire. This would also indicate that until contrary research findings are found, the model of cognition set forth in figures 1a and 1b is feasible.

Additionally, this questionnaire tests the



relationship between the valence of the emotion and its interrelationship with the other cognitive components. The participants of this questionnaire varied in race, gender, and ethnicity.

### **Hypotheses**

In the previous chapters I stated certain assumptions about cognition, the predominant two of which are as follows: (a) that it is related to one's experiential history, and (b) that functionally its components are interrelated. As one of the components of cognition, emotion (with its inherent valence of pleasure and displeasure) affects the learning process of an individual. By extension, then, the nature of the African American experiential history regarding education, incorporating many negatively valenced emotional experiences, may contribute to explaining why African Americans do so poorly in U.S. schools. In the interest of furthering the understanding of this phenomenon of poor school performance, the five questionnaires used in this research were designed to explore the two main assumptions via several of their logical derivatives.

#### **Assumption 1: Experience**

The essence of the first assumption is that experience impacts and shapes the content of mentalistic structures. Several logical extensions of this assumption lead to

testable hypotheses--each of which will be addressed by the Mentalistic Structures Questionnaire results. First, as experience changes across historical eras, so mentalistic structures shift. Since the African American experience has changed massively since the slavery era, the model predicts that the mentalistic structures of African Americans today will be significantly different than those of African Americans during the slavery era. The segregation and Black consciousness raising eras also provide time frames for which one can legitimately assume that the experience of most African Americans were affected. So the mentalistic structures of African Americans today will be most like those of the Black consciousness raising era and least like those of the slavery era.

Second, if experience affects mentalistic structures, then one would expect that African Americans for whom one can assume shared experience will have similar mentalistic structures. So African Americans today will have some mentalistic structures for which the content is very similar across individuals because they can be expected to share some experiences across the society. Also, because individual experience will differ even across one society, it is unlikely that individuals will always agree with each other with regard to the content of mentalistic structures (i.e., the items on the Mentalistic Structures

Questionnaire).

Third, the shifts in mentalistic structures that are expected across eras are likely to be influenced by major shifts in experience. These shifts are what distinguish one era from another. Under "normal" circumstance, parents (with their mentalistic structures) will be significant contributors to their child's experience. Therefore the child's mentalistic structures will be heavily influenced by parents' mentalistic structures. Under these conditions, mentalistic structures are likely to be similar between adjacent generations, in this study, those 30 years of age and under, and those 31 years of age and over.

#### Assumption 2: Related Components

The essence of the second assumption is that all six components of cognition (perception, intellect, emotion, will, behavior, and stored knowledge) work together. The model postulates that all the cognitive components always work together. However, it is unlikely that any one questionnaire designed for this study is fine-tuned enough to demonstrate this consistency, therefore, I proposed to use the Cognitive Components Questionnaire to see if there is a setting in which all six components can be demonstrated to work together, and the Black Rose Questionnaire was used to look more closely at the interrelated functioning of the components of cognition. I

hypothesize that the interconnection between the components of cognition could be demonstrated within a particular situation.

Because of my interest in African American school performance, further derivatives of the second assumption are focused on cognitive functionings in the academic setting. In this setting it is unlikely that there will be substantive disagreement regarding the importance of four of the cognitive components: perception, intellect, behavior (performance), and stored knowledge. However, it is my contention that emotion and will are equally important but have been historically overlooked. Due to limitations of exploratory research, emotion was chosen as a focus for this investigation (see Appendix C the Cognitive Components Questionnaire for information on the will).

The first such derivative is that since emotion is an integral component of cognition, students will have emotional responses to the academic setting. The Emotion and Education Questionnaire was used to investigate emotional responses to the Administration, Curriculum, Instructor, and Students of other races as aspects of the school environment. I hypothesized that emotion, being an important facet of the students' cognitive process, could be demonstrated for each of the four aspects of the environment in which the cognitive process takes

place.

Second, since all the cognitive components work together, they will impact one another. Emotion therefore is likely to provide a tenor or atmosphere to the whole of the cognitive process. The valence of emotion was expected to be demonstrably related to the functioning of the other cognitive components. The Cognitive Components Questionnaire was used to look at this relationship. The Emotion and Education Questionnaire was also used to investigate the students' view of whether emotional valence affects learning as a process.

Third, not only will students have emotions regarding the academic setting, but since these emotions will have a valence, the valence will be related to the students' posture toward school. Both the Cognitive Components Questionnaire and the Emotions and Education Questionnaire were used to investigate the relationship between the valence of emotions generated in school and the students' emotion or attitude about school.

#### Summary of Hypotheses

With out the logical transitions, and for ease of reading, the hypotheses investigated in this study are listed below:

- Ho. 1 The mentalistic structures of African Americans today will be most like those of the Black

consciousness raising era and least like those of the slavery era.

Ho. 2 African Americans today will have some mentalistic structures for which the content is very similar across individuals, however, not all mentalistic structures will demonstrate high similarity across individuals.

Ho. 3 The mentalistic structures of African Americans will be similar between adjacent generations, that is between those 30 years of age and younger, and those 31 years of age and older.

Ho. 4 The six cognitive components (perception, intellect, emotion, will, behavior, and stored knowledge) can be demonstrated to work together within a particular situation.

Ho. 5 Students will have an emotional response to the various aspects of the academic setting (administration, curriculum, instructor, and students of other races).

Ho. 6 The valence of emotion will be related to the functioning of the other cognitive components and to the students' view of learning as a process.

Ho. 7 The valence of emotion generated in school will be related to the students' emotion or attitude about school.

#### **Analysis of Data**

The statistical procedures used to analyze the data obtained from the Mentalistic Structures Questionnaire were an ANOVA, Correlation Coefficient, and Frequency Distribution. The statistical procedures used to analyze the data obtained from the Cognitive Components and the Emotion and Education Questionnaires were a Correlation Coefficient and Frequency Distribution. The statistical procedure used to analyze the data obtained from the Black Rose Questionnaire were a Matrix Correlation. All hypotheses were tested at the .05 level of significance.

#### **The Delimitations**

This study does not attempt to resolve the problem of the castelike students' failure within the United States. This study also does not attempt to give a specific application of the model set forth in this study for curriculum design.

#### **Discrete Interest**

Additional research findings from this study (i.e., information other than that for the hypotheses) are discussed under the heading of Discrete Interest.

## CHAPTER 5

### REPORT OF FINDINGS

#### Introduction

The purpose of this study was to test an integrative model of cognition through researching the problem of why subordinate students, particularly African Americans, continue to do so poorly in school. My strategy for determining this was to design an integrative model of cognition, based upon the principles of integration; and test this model through self-designed questionnaires by showing (1) a fused interrelationship among the cognitive components which are the senses (perception), intellect, emotion, will, behavior, and stored knowledge; (2) a relationship between the real world (the African American experience) and the mentalistic structures of African Americans today; (3) a relationship between emotion and (a) learning, (b) one's like or dislike of school, (c) education; and (4) a relationship between valenced emotion and education (as defined in the Emotion and Education Questionnaire). If these relationships are established, I then generalize, based on an analysis of the data and the nature of human cognition that, if African Americans are experiencing education negatively in this country, then



they also may be willingly choosing to remove themselves from such experiences in an effort to avoid what they perceive to be a negative situation. If the above relationships are established, then they will also contribute support for further research of this integrative model of cognition.

According to this model human cognition is a fused interrelationship between the cognitive components which are the senses (perception), intellect, emotion, will, behavior, and stored knowledge. Acquisition involves the senses; organization involves the intellect, emotion, and will; behavior involves action; and an increase of knowledge involves storage (see Figures 1a and 1b, An Integrative Model of Cognition). The sum of this model is that (a) the content of one's mentalistic structure is determined by all of one's experiences in life to date and (b) cognition is a fused interrelationship between the cognitive components.

A section of this research strategy was also designed to test whether certain of Ogbu's assumptions regarding his taxonomy of minority groups, with specific reference to African Americans or a castelike people, could be supported through empirical research. Therefore, the largest ethnic group represented in this study is the African American ethnic group.

In this chapter I present the results of my research

and the analysis of my data used to test my hypotheses. I discuss its findings and the summary of my research under the following headings:

1. Data collection
2. Demographic description
3. Discussion of hypotheses
4. Discrete interest
5. Summary and conclusions

#### Data Collection

The data for this research were collected by questionnaires between July 1, 1991 and November 30, 1991. They were distributed at random anywhere there was a congregation of people, particularly African Americans; they were distributed to people of different ages, ethnic groups and races within the Los Angeles and Orange County areas of California. Many of them were distributed at Churches and private and public institutions, particularly schools. For several days they were distributed at random on the streets and in the homes of residents living in the city of Los Angeles.

All participants were told not to include their names on the questionnaires because their individual findings would not appear in the analysis of this study. They were informed that there were no right or wrong answers and that the only requirement was to tell the truth. They were

assured that their individual answers would be kept anonymous and confidential since only the cumulative findings of this study would be published. The questionnaires used in this research are as follows: the Mentalistic Structures, Cognitive Components, Emotions and Education, Black Rose, and Demographics Questionnaires (see Appendix C for Questionnaires). Demographics obtained from each participant includes age, grade level, sex, marital status, place of birth, ethnic group, and religion whenever possible.

#### **Demographic Descriptions**

The demographic descriptions are given for each questionnaire individually. Only the ones relevant to this study are tabled. Many of them are featured in a single section because of their large numbers, and it seemed easier to follow them when kept categorized.

#### **Mentalistic Structures Questionnaire**

In the Mentalistic Structures Questionnaire 135 participants were asked questions pertaining to the following: age, grade level, sex, marital status, place of birth, race, religion, and city in which their school is located. Their ages ranged from 11 years to 67 years of age (mean = 36.26, SD = 14.55). Their grade levels ranged from the 4th grade to the 13th grade level (college and above).

The largest percent of them were married (51.90%) and female (52.67%). All of them were African Americans and Christian. Their place of birth and location of school were well distributed (see Tables D-1 through 8).

#### Cognitive Components Questionnaire

In the Cognitive Components Questionnaire 137 participants were asked questions pertaining to the following: age, grade level, sex, marital status, place of birth, race, religion, and city in which their school was located. Ages ranged from 7 years to 48 years of age (mean = 13.27, SD = 7.066). Grade levels ranged from the 2nd grade to the 13th grade level. The largest percent of them were single (95.62%) and African American (57.66%); 52.55% of them were females and 98.97% of them were Christians. Most of them were born in California (66.67%) and attending school there (47.41%) (see Tables D-9 through 16).

#### Emotions and Education Questionnaire

In the Emotions and Education Questionnaire 100 participants were asked to answer questions pertaining to the following: age, grade level, sex, race, religion, and type of school in which they attend (i.e., religious or none-religious). Ages ranged from 10 years to 57 years of age (mean = 18.75, SD = 10.088). Grade levels ranged from the 7th grade to the 13th grade level. The largest percent of them were females (56.348%). They were mostly African

Americans (51.55%) and Christians (98.67%). Most of them attended non-religious schools (67.57%) (see Tables D-17 through 22).

### Black Rose Questionnaire

In the Black Rose Questionnaire, besides the main focus of the questions, 218 participants were asked to give their race only. The largest percent of them were African Americans (African American 46.51%, White American 25.58%, Hispanic 15.81%, Other 12.09%). (see Table D-23).

### Discussion of Hypotheses

The statistical procedures conducted in this research were a Frequency Distribution, Matrix and Correlation Coefficient, *t*-test, and ANOVA. All calculations were computed on a Stat-View 512 statistical program and were two-tailed with an alpha level set at .05 significance.

Ho. 1 The mentalistic structures of African Americans today will be most like those of the Black consciousness raising era and least like those of the slavery era.

Participants interacting with the Mentalistic Structures Questionnaire were asked if they agreed or disagreed with statements/beliefs taken from the works of Lester (1986), Salley and Behm (1981), and Washington (1986), which were held by other African Americans living during the periods of Slavery, Segregation, and Black

Consciousness (the present). A key was constructed to positively correspond with the beliefs held by these earlier African Americans (see Table D-24). Because the African American experience has changed massively since the Slavery era, the current model predicts that the mentalistic structures of African Americans today will be significantly different from the mentalistic structures of those who lived during the slavery era. Hypothesis one indicates that the mentalistic structures of African Americans today will be most like those of the Black Consciousness raising era and least like those of the slavery era.

Overall, 45% of the participants agreed with the Key, 15% with the first section (Slavery), and 29% with the second section (Segregation to Black Consciousness), thus indicating that there has been some change in the mentalistic structures of African Americans during these time periods (see Appendix C for answers to the Mentalistic Structures Questionnaire & Tables 1, D-24, and D-25).

The participants' responses were converted to percentage of agreement with the key for each of the three time periods. A repeated measures ANOVA was conducted to determine the level of agreement with the three time periods, a higher mean score indicated a higher percentage of agreement with a time period (see Table 1).

Table 1

**Repeated Measures Anova for Mentalistic Structures Mean Scores of Agreement.**

Factor	Mean	Standard Dev.	Standard Error
Slavery	.421	.121	.011
Segregation	.446	.145	.013
BC	.643	.148	.013

BC = Black Consciousness

Comparison	MD	Dunnett t:
Slavery vs Segregation	-.025	1.926
Slavery vs BC	-.222	16.972*
Segregation vs BC	-.197	15.046*

\* Significant at  $p < .05$

MD = Mean Difference

The group's mean scores for each time period show that they agreed least with the period of Slavery (mean = 42.1%, SD = 12.1%), more with the period of Segregation (mean = 44.%, SD = 14.5%), and most with the present time period of Black Consciousness (mean = 64.3%, SD = 14.8%). The Dunnett  $t$ -test demonstrated that there were significant differences between the time periods of Slavery versus Black Consciousness ( $t = 16.97$ ,  $p < .05$ ) and Segregation versus Black Consciousness ( $t = 15.05$ ,  $p < .05$ ), no significance was shown between Slavery versus Segregation. An analysis of the data shows that there is a shift in the mentalistic structures of African Americans today, across the three time periods of Slavery, Segregation, and Black Consciousness. They agreed least

with the period of Slavery, more with the period of Segregation, and most with the period of Black Consciousness, showing that the content of their mentalistic structures have changed as their experiences in America have changed. This supports the contention that experience does affect one's mentalistic structure.

Ho. 2 African Americans today will have some mentalistic structures for which the content is very similar across individuals, however, not all mentalistic structures will demonstrate high similarity across individuals.

Using a frequency distribution procedure to determine the participants' percentages of agreement with each other, it was determined that 95% of the group agreed with each other only on 6.12% of the questions, 75% or more of the participants agreed with each other on 40.82% of the questions, and at least 50% of them agreed with each other on 94.90% of the questions, indicating both cohesion within the group and individual differences (see Table D-26).

Ho. 3 The African Americans' mentalistic structures will be similar between adjacent generations.

Also, using the same percent distributions, the data was divided by both eras and ages: younger (below 31 years) and older (over 30 years). Using descriptive measures, mean scores were obtained for each era, and grouped according to the participants' ages (see Table 2).



Table 2

Mean Scores Eras.

Era	Younger Mean	n	Older Mean	n
Slavery	.418	40	.418	81
Segregation	.470	40	.426	84
BC	.626	37	.654	77

BC = Black Consciousness

A t-distribution procedure was conducted and showed no significant differences between the mean scores of older and younger African Americans for any of the three time periods ( $t = .255$ ,  $p > .05$ ). Marital status, place of birth, sex, and grade levels also demonstrated no significant impact on responding to the Mentalistic Structures Questionnaire. These findings further indicate a cohesion among the mentalistic structures of African Americans today.

In summary, the findings from these research procedures indicate that (a) there is a relationship between the mentalistic structures of African Americans today and the mentalistic structures of those who lived during the periods of Slavery, Segregation, and Black Consciousness, and related most closely to the period of Black Consciousness and least closely to the period of Slavery; (b) there is both cohesion and individuality among the mentalistic structures of African Americans today; and (c) there were no significant differences between the older

and younger African Americans' responses to the Mentalistic Structures Questionnaire, further supporting that there is a cohesion among their mentalistic structures.

Accordingly, historical experiences of African Americans which occurred approximately 200 years ago still have the potential of effecting their mentalistic structures today. Thus, these findings also indicate that the content of the African Americans' mentalistic structures is both historical in nature and have changed on a continuum which parallels their experiences.

Ho. 4 The six cognitive components (perception, intellect, emotion, will, behavior, and stored knowledge) can be demonstrated to work together within a particular situation.

A preliminary look at the data for the Cognitive Components Questionnaire indicated that the participants understood and were willing to respond to the items. This is important because the items of this questionnaire espoused the fusion of the various components of cognition (see Appendix C for answers to the Cognitive Components Questionnaire).

An analysis of the data shows that in response to both the negative and positive questions, there is a consistency among the the participants' understanding of them, which includes their understanding of the valence within emotion. Also, within each correlation there is present one or more

of the cognitive components which were focused upon in the questionnaire, thus indicating a general relationship between them within such situations as posed on the Cognitive Components Questionnaire (i.e., questions 4 and 46 correlated significantly with questions which contained all six cognitive components) (see Tables D-27 & D-28).

In the Black Rose Questionnaire participants were asked to interact with objective data (the black rose) and process it in six realms: perception, intellect, emotion (including a positive and a negative valence) will, behavior, and stored knowledge. In this questionnaire, each cognitive component was represented. First the students were asked to imagine a black rose (stored knowledge) and give their perception of it (pretty, ugly etc.). Next they were asked what they thought (intellect) about the rose and why. Then they were asked how the rose made them feel (emotion), and if they wanted to get closer or farther away from it (behavior and will). Lastly, they were asked again what they thought of the rose (see Appendix C for the Black Rose Questionnaire).

A Matrix Correlation procedure was conducted to determine the nature of the relationship among the cognitive components themselves. An analysis of the data shows positive relationships among all the components, but no significant relationships between them and race, 46.51% of participants were African Americans. The positive

relationships indicate a fusion of the components (see Table D-26). Also, all but three of the entire gamut of answers were skewed towards a negative or a positive valence or slant, thus indicating an interrelationship among the cognitive components (e.g., Stored knowledge, perception, thoughts, feelings, valence, and suggested behavior were either all negative or all positive towards the black rose) (see Appendix C for Black rose Questionnaire).

An analysis of the data from the Black Rose Questionnaire shows a fused interrelationship among the cognitive components themselves; a relationship between stored knowledge, the real world (the black rose), and cognition; and a positive and negative valence among the cognitive components indicating the influence of emotion on the other components (see Table D-26).

Ho. 5 Students will have an emotional response to the various aspects of the academic setting (administration, curriculum, instructor, and students of other races).

A Frequency Distribution procedure was conducted, and an analysis of the data showed that emotion does play a part in the educational setting. Participants of the Emotions and Education Questionnaire were asked to indicate if they had ever experienced certain positive and negative emotions while interacting with (a) administrators, (b)

curriculum, (c) instructors, and (d) students of other races while attending school. Total, there were 793 responses for administration, 866 responses for curriculum, 1128 responses for instructors, and 1061 responses for students of other races. These were then divided according to negative and positive responses, and then by ethnic groups (see Appendix C for answers to the Emotion & Education Questionnaire and Table 3). The African Americans' responses showed that they experience all four educational components more positively than negatively. The highest percentage of positive responses was given to students of other races (60% positive; 40% negative). The lowest percentage of positive responses was given to administration (51% positive; 49% negative). Instructors produced the highest frequency of responses ( $n = 558$ ) the majority of which were positive (59%) (see Table 3).

The Asians' responses showed that they experience administration and curriculum somewhat negatively (69% and 53% negative respectively); they experienced Instructors and students of other races somewhat positively (53% and 62% positive respectively). Among the Asian students the most responses were generated by students of other races ( $n = 253$ ; 62% positive; 38% negative).

The Hispanics' responses showed that they experience all four components more positively than negatively. The highest percentage of positive responses were generated by

the administration (60%) and the lowest by the curriculum (51%). Instructors again produced the highest frequency of responses (n = 221; 65% positive, 35% negative) (see Table 3).

Table 3

Frequencies by Race for the Emotions Education.

Race	ED Component	P Frequencies	N Frequencies	n
AA	Administration	51%	49%	347
AA	Curriculum	56%	44%	409
AA	Instructor	59%	41%	558
AA	Students	60%	40%	504
AS	Administration	31%	69%	153
AS	Curriculum	47%	53%	171
AS	Instructor	53%	47%	214
AS	Students	62%	38%	253
HS	Administration	60%	40%	202
HS	Curriculum	51%	49%	195
HS	Instructor	65%	35%	221
HS	Students	54%	46%	193

AA = African American  
AS = Asian  
HS = Hispanic  
ED = Educational  
P = Positive  
N = Negative  
n = Number of frequencies

There were not enough participants represented in the missing races to analyze the data, further research is needed in this area (see Table D-20). The data are noteworthy in that aside from the percentages and ethnic differences, students displayed emotional responses to all four facets of the academic setting. It is also interesting that among these ethnic or subordinate groups

the emotions are predominately positive. It would be interesting to compare these percentages with comparable responses for majority ethnic students. However these data were not available (further research is needed in this area).

Ho. 6 The valence of emotion will be related to the functioning of the other cognitive components and to the students' view of learning as a process.

There was a positive relationship between positive emotion and learning on the Emotion and Education Questionnaire. In question 29, those who participated in the Emotions and Education Questionnaire were asked to indicate whether they learned more while experiencing positive emotion or negative emotion; 82.47% indicated that they learn more while experiencing positive emotion.

Participants of the Cognitive Components Questionnaire were asked to answer whether they agreed or disagreed with both positive and negative statements relating to their schooling. In each question, one or more of the cognitive components were specifically emphasized; then the questions were divided into two groups, positive and negative. Item 20 states, "learning feels good when I'm happy," and Item 33 states, "learning feels bad when I am sad." A correlation procedure was conducted to determine the nature of the relationship between questions 20 and all the

positive questions on the questionnaire, and question 33 and all the negative questions on the questionnaire. Of the positive questions 67.74% correlated significantly with question 20; 42.42% of the negative questions correlated significantly with question 33 (see Tables D-27 & D-28).

Participants interacting with the Cognitive Components Questionnaire were also asked to indicate if positive emotion enhanced their learning and if negative emotion hindered their learning. A Frequency Distribution was conducted and showed that 82.48% answered yes and 17.52% answered no to question 20 ("Learning feels good when I'm happy."), and that 54.89% answered yes and 45.11% answered no to question 33 ("Learning feels bad when I am sad."; see Appendix E for complete distributions). An analysis of the data also showed positive correlations between (a) positive emotions and the enhancement of learning and positive school experiences, and (b) negative emotions and the hindrance of learning and negative school experiences (see Appendix C for answers to the Cognitive Components Questionnaire). In both cases the participants confirmed that positive emotion enhances learning and negative emotion hinders learning.

Interestingly, the Emotions and Education Questionnaire showed that 82.47% of the participants said that positive emotion enhances learning, whereas 17.53% said that negative emotions enhance learning. Also as



stated above, on this questionnaire, 54.89% of the participants said negative emotion hinders learning whereas 45.11% said it did not, leaving less than a 10% difference between the two answers. This indicates that although negative emotion hinders learning it does not hinder it altogether, thus suggesting that students do learn in negative situations. The question is: What do they learn in negative educational arenas? This research does not attempt to address this question, but it does hold that whatever they are learning it has an inherent negative valence within it, and may give researchers some indication as to why African Americans have high expectations but low performances within our educational arenas (see Discrete Interest Section).

The research findings also indicate that there is a general fusion between the cognitive components themselves, both within a negative and a positive educational situation. The data showed this fusion exists between the components by the fact that (a) questions incorporating each of them in an educational/school setting were endorsed (agreed with) at some point in the participants' responses and that (b) the questionnaire had one question for each valence (questions 46 & 4) which displayed correlations with other questions indicating all of the components. Based on the storage of knowledge and the fused nature of cognition, another implication is that one's mentalistic

structure may have enough stored valence so that, for some individuals, "learning" in an immediate negative situation does not delete all the value of the learning from the situation.

Ho. 7 The valence of emotion generated in school will be related to the students' emotion or attitude about school.

Participants interacting with the Emotions and Education Questionnaire were asked to answer yes or no to questions 28, 29, and 30, i.e., if (a) positive emotion (feelings) makes them like school more (better), (b) if they learn more when experiencing positive or negative emotion, and (c) if negative emotion make them like school less (worse). First a Frequency Distribution procedure was conducted to determine the participants' percentage of agreement or disagreement with these three questions, the cumulative frequency for each question is as follows: (a) 89.90% yes and 10.10% no, (b) 82.47% positive and 17.53% negative, and (c) 73.96% yes and 26.04% no (see Appendix C for the Emotion & Education Questionnaire). Next a Correlation procedure was conducted to determine the nature of the relationship between these three questions (see Table 4).

Table 4

**Correlations between Questions 28, 29, and 30 on the Emotion and Education Questionnaire.**

Variable Pairs	n	r
28 & 29	214	.286*
29 & 30	91	N.S.
30 & 28	95	-.205*

\* Correlation Coefficient significant at .05 alpha level  
N.S. = No Significance

An analysis of the data shows that there is a positive relationship between questions 28 and 29, a negative relationship between questions 28 and 30, and no relationship between questions 29 and 30. This indicates that there was (a) a positive relationship between positive emotion and one's like of school and (b) a negative relationship between positive emotion and one's dislike of school, i.e., the more the participants endorsed the statement that positive emotions contributed to liking school, the more they also indicated that negative emotions contributed to disliking school. Also a frequency distribution showed that 73.96% of the participants indicated that negative emotion make them like school less. Thus, an analysis of the data indicates that the participants believe that positive emotion makes one like school more whereas negative emotion makes one like school less.

Data from the Cognitive Components Questionnaire also

indicates that negative emotion makes students like school less while positive emotion makes them like school more (see Appendix C for Cognitive Components Questionnaire). Next Ogbu's work and additional findings will be discussed in the Discrete Interests section.

#### Discrete Interest

##### Mentalistic Structures Questionnaire

Ogbu. Questions from Ogbu's work were included on the Mentalistic Structures Questionnaire, the following is an analysis of the data. Questions number 72 and 80 through 87 pertained to his work (see Appendix C for Mentalistic Structures Questionnaire). A Frequency Distribution was conducted to determine the groups' percentage of agreement with the key, i.e., answers corresponding positively to Ogbu's research findings and/or assumptions stated in his writings.

The following is a description of the results obtained: (a) 66.67% of respondents do not trust White Americans in this country; (b) 77.12% agree that the political system in the United States functions in a way which is designed to keep them at a lower social and economic status; (c) 94.17% agree that the political system in American is dominated by white males; (d) 92.56% agree that White Americans in this country have more advantages than they do. The remaining questions produced responses

that were fairly evenly distributed between agreement and disagreement. Respondents (a) are not in agreement as to whether they and their teachers think alike: those in the college level and older basically agree that they and their teachers do not think alike; (b) are divided as to whether they have faith in America's educational system: those between the college level and 31 years of age do not believe that our educational system has their best interest as its goal; (c) do not agree on whether education is a means of getting what they want in this country; (d) are divided on whether education has the power to rid this country of racism; and (e) are not in agreement with whether education has the potential power to rid this country of the social and economic barriers which exist between Whites and African Americans in this country.

Only questions 72 and 80 through 82 have a two-thirds or more agreement rate among the participants. Based on a 50% and above agreement with the key, the findings of this sample agreed with one half of Ogbu's assumptions and disagreed with the other half, nevertheless many of the research findings from the Mentalistic Structures and Cognitive Components Questionnaires corroborated his research findings, and a triangulation of both our research findings would show that they are similar in many ways. Therefore, I extrapolate that Ogbu's research findings, which are ethnographic in nature, can be tested upon the

psychological framework presented in this study.

Notwithstanding, more research needs to be done in this area, i.e., each of his assumptions need to be tested individually, and on such a framework (see Appendixes C, D, & E for research findings).

Research findings according to age levels. The African American participants 30 years of age and younger had less faith in the American system than those 31 years of age and older. Those 31 years of age and older believed that our educational system was designed with their best interest as one of its goal whereas those under 30 years of age did not. Both groups intended to escape their fates as African Americans in this country.

#### The Cognitive Components Questionnaire

The findings from this questionnaire indicate that African American students come to school prepared and willing to learn, and that they trust the school to give them what they need to succeed in life. This is comparable to the results from the Emotion & Education Questionnaire indicating that African Americans have a predominantly positive emotional response to the aspects of the school setting. There however is a strong minority of responses which are negative on both these questionnaires (40%-49% on the Emotion and Education Questionnaire). I contend that these negative responses in conjunction with a negative

mentalistic structure regarding formal education influenced by cross-generational experiences may be strong enough to perpetuate a tendency toward low performance among African American students. (See Appendix C for the Cognitive Components and Emotion & Education Questionnaires and Table D-29.)

### Black Rose

Research findings from the African American participants clearly showed a relationship between the cognitive components and the somatic aspects of cognition (see Figures 1a and 1b); to imagine the black rose affected many of them physically (see Table D-30 for participants' actual statements).

### Summary and Conclusions

Although these findings are interesting, more research needs to be done within all the above areas, particularly in relation to why African Americans continue to have such high aspirations towards schooling yet have such low achievement performances within it. At best, these findings can only suggest a reason as to why this contrast is so. Notwithstanding, according to the research findings and the testing of the model itself, it is clear that the nature and function of human cognition play a major role in the African Americans' response to and attitude towards American education, thus being a key factor in explaining

why they perform so poorly in school.

The analysis of the research data indicates that experience does affect one's mentalistic structure, the six cognitive components (the senses, intellect, emotion, will, behavior, and stored knowledge) are functionally related; today the African Americans' mentalistic structure is least like that of African Americans who lived during the Slavery era and more like those living during the Black Consciousness era; mentalistic structures are similar between adjacent generations; the cognitive components can be demonstrated to work together within a particular situation; students do have emotional responses to the various aspects of the academic setting (administration, curriculum, instructors, and students of other races); the valence of emotion is related to the functioning of the other cognitive components and to the students' view of learning as a process; and the valence of emotions generated in school is related to the students' emotion or attitude about it.



## **CHAPTER 6**

### **SUMMARY AND CONCLUSIONS**

**In this chapter I present the summary and conclusions of this study. This information is discussed under the following headings:**

- 1. Summary and purpose of design**
- 2. Summary of findings**
- 4. Implications of findings**
- 6. Recommendations for further study**
- 7. Conclusion**

#### **Summary and Purpose of Design**

**This study emerged out of my dissatisfaction with the existing cognitive theories which did not parallel my experiences as an African American, nor were analogous to my perception of myself. Another of my concerns was the gap I saw between the proclamation and praxis within our educational arenas. Thus, I embarked on an 11 year study of interpreting and researching the phenomena I saw at work within these arenas, particularly schooling. An Integrative Model of Cognition and Biblical Levels of Intellectual Development are the results of this study.**

**An integrative model of cognition merely states that cognition, which is the acquisition, organization, and use**

of knowledge, is a fused interrelationship between the cognitive components which are the senses, intellect, emotion, will, behavior, and stored knowledge. Acquisition involves the senses, perception, and stored knowledge. Organization involves intellect, emotion, and will. Behavior involves action. These components function or operate upon consciousness, thus, to be conscious is to learn or be actively involved in the education process in some manner. I, along with Spindler, define education as the transmission of culture, and because one's environment dictates one's culture, schooling is merely one type of an educational arena. Accordingly, one's mentalistic structure contains the mentally stored experiences of one's entire life.

If cognition consists of fused components, then these components must be at work within our educational arenas; and if these components must be at work within our educational arenas, then they should be considered a vital part of the educational process, particularly schooling.

The underlying assumptions of this study are as follows: (a) If education is related to experience, then education is related to environment, (b) if education is related to environment, then education is passed on from generation to generation, (c) if education is passed on from generation to generation, then education is historical in nature, (d) if education is historical in nature, then

one's mentalistic structure is also historical in nature, (e) if education is related to environment, then the content of education is different in different environments, and (f) if the content of education is different in different environments, then the content of one's mentalistic structure is different in different environments. In addition, if all people have like (the same) cognition, then in spite of the differences in environment, cognitively they still have some things in common.

The underlying presuppositions of this study are as follows: First, one acts according to what he or she believes. Second, John Dewey, who has greatly influenced our educational system, holds certain beliefs which I do not believe to be true, yet much of educational research is based upon his work and that of L. S. Vygotsky, whose beliefs are similar to Dewey's. In light of this and the resurgence or revival of neo-Darwinian writings, we need an integrative model of cognition which has the potential of explaining the observable phenomena which occurs within our educational arenas, particularly schooling. We also need a model which is an alternative to the existing models which are rooted in Evolution and Social Darwinism. I hold that any cognitive theory built upon the doctrines and principles of evolution will inevitably result in a

curriculum which implies (explicitly or implicitly) that there is a fittest and non-fittest race, and a superior and inferior culture (e.g., genetic inferiority, cultural deficit, cultural mismatch).

The model of cognition introduced in this dissertation is built upon the integration of psychology and theology, principles set forth by Farnsworth (1985) and Carter and Narramore (1979). I consider this model to be an integrative as well as a biblical model of cognition. I chose to build upon the principles of integration because first, all people have access to "natural revelation" or truth. Second, all truth is God's truth, therefore the truth contained in secular writings should not conflict with the truth of Scripture, in fact, they should complement each other. Third, because psychology is a field of study which primarily concerned itself with the mechanisms by which people function and the methods to assess and influence that functioning, it is vital to this study.

Only a biblical definition(s) of cognition and levels of intellectual development are discussed in this study; I have purposely avoided using writings which contained extra-biblical implications and applications of these terms because too often their authors are writing from either a culturally biased or culturally relative perspective. Therefore I have stayed as close as possible to the

epistemological definition of these terms. In this study I delineate the picture of cognition which I see revealed in Scripture and triangulate it with related truths found in other disciplines such as educational psychology, theology, and anthropology.

I use the writings of John Ogbu as a springboard from which to start my study, because I believe that he and I are looking at the same phenomena from different angles. Although our work is different in many respects, and we perform different types of research (qualitative and quantitative), our research findings are similar. In this study, my original focus was directed towards discovering a cognitive or psychological explanation for why African Americans behave as they do towards our educational arenas, particularly schooling. Therefore my main goal in this study was to design and test a new model of cognition, which I did through the process of integration and the utilization of five self-designed questionnaires: the Mentalistic Structures, Cognitive Components, Emotion and Education, Black Rose, and Demographics Questionnaires.

The Mentalistic Structures Questionnaire was used to test the relationship between the mentalistic structures of (a) African Americans today and of those who lived during the time periods of Slavery, Segregation, and Black Consciousness, (b) older and younger African Americans today (30 years of age and younger and 31 years of age and

older), (c) today's African Americans, and certain assumptions taken from the writings of Ogbu.

The Cognitive Components Questionnaire was used to test (a) the nature of and the function of the cognitive components (senses, intellect, emotion, will, behavior, and stored knowledge) within a particular situation, (b) the relationship between the valence in emotion and students' views of learning, (c) the relationship between the valence in emotion and cognitive functions.

The Emotions and Education Questionnaire was used to test the nature of the relationship between (a) emotion and education (administration, curriculum, instructor, and students of other races), and (b) the valence in emotion and students' attitudes towards school.

The Black Rose Questionnaire was used to test the nature of the fused interrelationship between the cognitive components within a particular situation. In relation to the model itself, the Mentalistic Structures Questionnaire tested the relationship between the real world (experience or objective reality) and cognitive functions, i.e., senses, intellect, emotion, will, behavior, and stored knowledge. The Cognitive Components Questionnaire tested the functional nature of the cognitive components, i.e., their interrelationship. The Emotions and Education Questionnaire tested the relationship between cognitive functions and both an object and subjective reality:

education and learning. The Black Rose Questionnaire tested the fused interrelationship among the cognitive components. The questionnaires were designed to do two things, first test the model itself, and second test the model within particular situations, many of which involved schooling.

#### Summary of Findings

An analysis of the research data indicates that Experience does affect one's mentalistic structure, and that the six cognitive components (the senses, intellect, emotion, will, behavior, and stored knowledge) do have a fused interrelationship. Today the African Americans' mentalistic structure is least like that of the African Americans who lived during the Slavery and Segregation eras and more like that of African Americans who live during the Black Consciousness era. Mentalistic structures are similar between adjacent generations (i.e., those 30 years of age and younger and those 31 years of age and older). All six cognitive components can be demonstrated to work together within a particular situation. Students do have emotional responses to various aspects of the academic setting (administration, curriculum, instructors, and students of other races). The valence of emotion is related to (a) the functioning of the other cognitive components, and (b) a student's view of learning as a

process. The valence of emotion generated in school is related to a student's attitude towards the schooling process.

Ogbu's assumptions relating to why African Americans continue to do so poorly in school were also tested on the psychological framework provided by this study (the triangulation of our findings will verify this; see Appendixes C, D, & E for our research findings). In addition, the findings show that there is a cohesion among the mentalistic structures of African Americans today, indicating that they have changed on a continuum which parallels their historical experiences in America.

In relation to education, the findings show that participants report that positive emotion enhances learning, while negative emotion hinders learning, also that positive emotion causes one to like school, while negative emotion causes one to dislike school; notwithstanding, negative emotion does not hinder learning altogether. The students in this research say they think, learn, and work better in positive schooling situations as opposed to negative ones. Further, all the cognitive components are related to the educational process, therefore they should be treated as such.

As a result of addressing and testing an integrative model of cognition, this study has provided a new model of cognition upon which to base further research studies in



the area of poor school performance among African American and other subordinate group students. It has also shown that maybe the solution to this problem has eluded previous researchers because their studies were built upon faulty or insufficient frameworks. It also shows that previous research findings have failed to consider the affect and effects of negative emotional experiences and one's ability to choose and/or exercise one's will within an educational arena. Lastly, contrary to the research findings of the Kerner Report, today's African Americans express a high degree of self-esteem and view themselves as separate but equal to Anglo-Saxon Americans (see Appendix C for findings from the Mentalistic Structures Questionnaire).

#### **Implications of Findings**

The implications of this study are far reaching, much further than this study allows:

- (a) To my knowledge, it presents the first biblical and integrative model of cognition.
- (b) It sheds new light on the nature of human cognition.
- (c) It affords Christian educators an alternative to using secular models of cognition which are rooted in evolution and social Darwinism, and
- (d) It provides a psychological framework upon which to test Ogbu's research findings.

### **Recommendations for Further Study**

**This study attempted to design an integrative model of cognition and validate it through researching the question of why subordinate students, particularly African Americans, continue to do so poorly in American schools. Although it gives much insight into this problem, and provides a basis for the replication of new research in this area, further research is still needed to sufficiently address this question. This research did not determine the nature of the relationship between negatively valenced emotion and (a) learning, and (b) one's like or dislike of schooling. The model itself needs further testing in the area of multiple contexts and facets of life, also further epistemological research is needed in the area of the biblical levels of intellectual development.**

### **Conclusion**

**Throughout this study more questions have been raised than answered, nevertheless the groundwork has been laid for future research in the field of integrative and biblical cognition, and biblical levels of intellectual development.**

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## Appendix A

### Pilot Questionnaire for the Emotion and Education Questionnaire

#### The Relationship Between Emotion and Learning

Questions: Is there a relationship between (a) emotion and education, and (b) emotions and one's attitude towards school?

Y Variable: Relation

\* 90% & over

	No (51% & Over)	Yes (51% & Over)
Abandoned	X	
Abhorrence	X	
Afflicted	X	
Afraid		X
Agitation		X
Alarm	X	
Alone		X *
Amazed		X
Angry		X
Anguish	X	
Anxious		X
Appalled	X	
Aroused		X
Arrogance	X	



<b>Awe</b>	<b>X</b>	
<b>Bereaved</b>	<b>X</b>	
<b>Blessed</b>		<b>X</b>
<b>Boastful</b>		<b>X</b>
<b>Bold</b>		<b>X</b>
<b>Broken</b>		<b>X</b>
<b>Brokenhearted</b>		<b>X</b>
<b>Burdened</b>		<b>X</b>
<b>Burning Anger</b>	<b>X</b>	
<b>Calamity</b>	<b>X</b>	
<b>Chasten</b>	<b>X</b>	
<b>Comforted</b>		<b>X</b>
<b>Compassion</b>		<b>X</b>
<b>Confidence</b>		<b>X</b>
<b>Confused</b>		<b>X</b>
<b>Consoled</b>		<b>X</b>
<b>Contempt</b>	<b>X</b>	
<b>Contention</b>	<b>X</b>	
<b>Courageous</b>		<b>X</b>
<b>Grave</b>		<b>X</b>
<b>Crushed</b>		<b>X</b>
<b>Deceit</b>		<b>X</b>
<b>Defenseless</b>	<b>X</b>	
<b>Delight</b>		<b>X</b>
<b>Deliverance</b>		<b>X</b>
<b>Derision</b>	<b>X</b>	

<b>Desire</b>		<b>X</b>
<b>Despair</b>	<b>X</b>	
<b>Despise</b>		<b>X</b>
<b>Despondent</b>	<b>X</b>	
<b>Destitute</b>	<b>X</b>	
<b>Devastated</b>	<b>X</b>	
<b>Dishonor</b>	<b>X</b>	
<b>Dismayed</b>		<b>X</b>
<b>Distress</b>		<b>X</b>
<b>Disturbed</b>		<b>X</b>
<b>Drained</b>		<b>X</b>
<b>Dread</b>		<b>X</b>
<b>Embittered</b>	<b>X</b>	
<b>Encompassed</b>	<b>X</b>	
<b>Envy</b>	<b>X</b>	
<b>Estranged</b>		<b>X</b>
<b>Exalted</b>		<b>X</b>
<b>Exposed</b>	<b>X</b>	
<b>Exulted</b>		<b>X</b>
<b>Fainthearted</b>		<b>X</b>
<b>Faithful</b>		<b>X</b>
<b>Favor</b>		<b>X</b>
<b>Fear</b>	<b>X</b>	
<b>Flourishing</b>	<b>X</b>	
<b>Forgiving</b>		<b>X</b>

Forgotten		X
Forsaken		X
Fretful	X	
Frustrated		X
Fury	X	
Futility	X	
Gladness		X *
Glory		X
Gracious		X *
Grief		X
Groan		X
Guilt		X
Hard-Hearted	X	
Haughty	X	
Helpless	X	
Hope		X *
Horror	X	
Humiliated		X
Hunger		X
Indignation	X	
Integrity		X
Jealous	X	
Joy		X
Lacking		X
Languish	X	
Loathe	X	

Lonely		X
Longing		X
Love: I Cor. 13		X *
Lovingkindness		X *
Low	X	
Melt	X	
Merciful		X
Misery	X	
Moaning	X	
Needy		X
Oppressed	X	
Outcast	X	
Overflowing		X
Overwhelmed		X
Pain		X
Panic	X	
Peace		X
Persecuted	X	
Pierced	X	
Pity		X
Plagued	X	
Pleasant		X
Pleasure		X
Ponder		X
Praise		X *
Proud		X

Provoked		X
Rage	X	
Raving	X	
Rebellion	X	
Rebuke	X	
Rejected		X
Rejoice		X *
Relief		X
Renewed		X
Reproach	X	
Restless		X
Restored		X
Reviled	X	
Revived		X
Safe		X
Satisfied		X
Secure		X
Shaken		X
Shame		X
Sick	X	
Sighing	X	
Smitten	X	
Sorrow		X
Steadfast		X
Stout-hearted		X
Stricken	X	

Stubborn		X
Suffer		X
Sunken		X
Sympathy		X
Tempted		X
Terror	X	
Thankful		X *
Travail	X	
Trembling	X	
Troubled		X
Trust		X
Uplifted		X
Utter Hatred	X	
Vexed	X	
Vindicated		X
Vengeance	X	
Violence	X	
Violent Hatred	X	
Want		X
Weak		X
Weeping	X	
Weary		X
Worship		X *
Wounded		X
Wrath	X	
Yearning		X

**Relation**

**x**

## **Appendix B**

### **Biblical Levels of Intellectual Development**

#### **Level I**

**And the eyes of them both were opened, and they knew they were naked; and they sewed fig leaves together, and made themselves aprons (Gen. 3:7)**

**In this verse yada is the word used for knew. It has the basic meaning of to notice, experience, observe (e.g., Deut. 1:39, Isa. 7:15-16, Gen. 41:31).**

#### **Level II**

**I am this day fourscore years old: and can I discern between good and evil? can thy servant taste what I eat or what I drink? can I hear any more the voice of singing men and singing women? wherefore then should thy servant be yet a burden unto my lord the king (II Sam. 19:35)?**

**The word yada is also used here for discern (note the relationship between the senses and discernment and/or ability). The observing of good and bad or right and left (John 4:11) leads to an ability to distinguish between them (cf., Brown, C. 1971). Children and possibly the elderly do not have this ability (Deut. 1:39).**

#### **Level III**

**I neither learned wisdom, nor have the knowledge of the holy (Prov. 33:3).**

**Here the word learned is law-mad which means to**



goad, i.e., by implication to teach, in an Oriental sense it means to use the rod as an incentive. It carries the idea of unaccustomed + (plus) diligently. To become (in time: progressively) an expert or skillful, maybe a teacher one's self. Levels I and II must be accomplished before level III can be entered into or accomplished.

In this verse, wisdom means "wisdom in a good sense," skillful, wise, and wit. Its primary root (khaw-kam) means to be wise in mind, word, or act + exceeding, to teach wisdom, to show one's self wise, and/or to make wiser (note, wisdom always has a source, "unbelievers" are also capable of being wise, e.g., Confucius).

Here knowledge (daath) means a cunning, witty, and/or awares kind of knowledge, or knowledge that is cunning. The root of this word is yada. The idea here is that knowledge passed on by a third party gives [the] meaning, i.e., it has innate meaning.

#### Level IV

Then I beheld all the work of God, that a man cannot find out the work that is done under the sun: because though a man labour to seek it out, yet he shall not find it; yea farther; though a wise man think to know it, yet shall he not be able to find it out (Eccles. 8:17).

The words find out (matsa) has the meaning that this type of knowledge does not "come forth" naturally. It does not naturally appear or exist before men. It cannot

be acquired through intellectual pursuit.

Labour(aw-mal) means to toil, i.e., to work severely and with irksomeness. Wise men who are intelligent, skillful, artfully cunning, subtle and/or wise-hearted cannot find it out. It is not man centered. Prov. 2:6 puts forth the idea that this type of wisdom, knowledge, and understanding is initiated by God (see wisdom, Level III).

The word gives (maw-than) means to use with great latitude of application, add, apply, and/or appoint (God gives...). The wisdom here is the same as that mentioned in Level III; it is wisdom in a good sense.

Here understanding (taw-boon, teb-oo-naw, or to-boo-naw) means intelligence, by implication--an argument; caprice, discretion, reason, skillfulness, understanding and/or wisdom. This type of intelligence is initiated by God and is acquired as one lives life (the emphasis here is on skill + experience).

#### Level V

He was a widow's son of the tribe of Naphtali, and his father was a man of Tyre, a worker in brass: and he was filled with wisdom, and understanding, and cunning to work all works in brass. And he came to king Solomon, and wrought all his work. (I Kings 7:14)

The widow's son was filled (maw-lay or maw-law): meaning to be full of, in its widest application it means to accomplish, confirm + consecrated, to be at an end, or

be expired. Here the word wisdom is used in the good sense. The word used here for understanding is taw-boon which means intelligence, and by implication, an argument. Here the word for cunning is dah-ath: meaning cunning in knowledge or knowledge that is cunning.

Gen. 25:27 speaks of Esau and Jacob. Although each boy grew in the following areas: pride, honor, boastfulness, excellence, and both physically and intellectually, Esau was a cunning (yada: discerning) hunter (e.g., Deut. 1:39, Isa. 7:15-16) and Jacob was plain (tawn): usually meaning morally plain, gentle, perfect, upright, and undefiled. The word tawn is from the root taw-man which means to complete, in a good or bad sense, accomplished.

In Luke 2:40, Jesus grew (owx-an-o) up over a period of time. He enlarged (actively or passively) and increased in spirit, wisdom, and grace. Here the word wisdom (sofee-ah) means a higher or lower and worldly or spiritually wisdom. It is from the prime root sofos which means wise in a most general application (cf., Brown, C., 1971; Strong, J., 1984). Jesus was the God man, He grew wise in both ways, yet without sin.

#### Additional Information

In Levels I and II the words knew and discern (yada) do not entail one's (or the) ability to

distinguish between good and evil, but the emphasis is on "learning to distinguish between the two." In Isa. 7:15, it is implied that infants and children know to choose evil but must learn to refuse it (notice, there are always two fundamental or primary modes of emotion: good and evil). Brown (1971) says, those in Levels I and II learn to distinguish between good and evil before they transition to Level III (cf., Brown, C., 1971; Strong, J., 1984).

Wisdom in Levels III, IV, and V is the word khaw-kawn meaning intelligent, skillful or artful-cunning, subtle, and/or wise-hearted but with an emphasis on "in a good sense." The root of khaw-kawn is khaw-kam, which means to be wise in mind, word, or act. The emphasis of wisdom in these levels (III, IV, and V) is on "good," but as stated above, wisdom can and does have two sources (good and evil). Wisdom from God places one in the center of His will at a particular time.

The meaning of the word cunning is different when used for Esau and the widow's son's abilities. Yada is used of Esau's abilities and a technical knowledge, but dah-ath is used in reference to the widow's son, denoting that technically, Esau could discern between good and evil knowledge, but that the widow's son had the ability to use knowledge cunningly and/or had acquired knowledge which was cunning, and that, to its fullest and best potential.

In concluding, Harris (1980) clearly makes a

distinction between the different levels of intellectual development. Infants cannot attain unto Level II because, although one takes in information, one cannot distinguish between the good or the bad [use] of it. Also a child cannot attain unto Level III because children cannot distinguish between the good and/or evil use of knowledge. At levels I and II infants and children gather and experience data, which leads to discernment or the ability to discern between the good and/or the evil use of knowledge. In Gen. 25:27, Esau was a cunning (discerning) hunter (he had the ability of a skillful hunter), but he didn't know how to use or apply his knowledge and abilities properly (wisely or in a good sense).

Individuals at Levels I and II are perceptive. Inherent in these levels are the process whereby one gains knowledge through experience with objects and circumstances in the real world. Each level leads to the next highest level (unfolding in nature). The levels are sequential and invariant, that is, at Level III, knowledge is superior to the mere gathering of data. Here one learns to separate mentally (distinguish) general understanding, one learns to attend, consider, be cunning and diligent, etc. Inherent in this level is the power of judgment and perceptive insight which is demonstrated in one's use of it. At this level one learns to use the knowledge one possesses. (It is possible to hear without perceiving, Dan. 12:8). At

this level one is old enough to "understand" (Neh. 8:3). The participial form refers to a teacher: one who gives discernment to students (Ezra 8:16).

Insight of moral understanding is a gift from God (Dan. 2:21) and is not the fruit of empiricism, it is ethical discernment. Such knowledge requires persistent diligence and not to pursue it will incur God's punishment (Prov. 2:1f).

One must successfully master Level III before one can progress to Levels IV and V. At both of these levels one has cunning abilities, wisdom, and understanding. (The man of understanding walks in a path of unrightness [Prov. 15:21]). Here, understanding can also be the object of knowledge as when one gains it (Prov. 3:13). Wisdom and understanding are paralleled and teaches the individual.

Wisdom is used technically in Levels IV and V. Such wisdom is required from government leaders and heads of state for administration (Deut. 34:9). It is required for all types of leaders, both Jew and Gentile, i.e., secular and Christian (Ezek. 28:4-5). It is expressed by shrewdness and prudence. As it relates to the practical affairs of life, it is derived from God (Isa. 33:6). It makes one humanly wise and leads to fear of the Lord (Job 28:28). The major differences between Levels IV and V and Esau and the widow's son (Gen. 25:27) are that in Level V the widow's son is filled with wisdom, understanding, and

cunning and Esau is not. Also the nature of their cunning is different.

Esau's cunning is discerning (yada). He is a skilled hunter and has knowledge pertaining to secular matters. His knowledge is gained in various ways by or thorough the senses (the same as in Levels I and II). The widow's son has knowledge (da at) of a personal, experimental nature, he also has technical knowledge and abilities. He uses his knowledge for discernment. God is the source of this knowledge and He teaches it to men. This kind of knowledge appears parallel with wisdom and understanding, instruction, and law, it is opposite folly. It is the contemplative perception of the wise man (Prov.1:4). The widow's son's wisdom is used for moral cognition.

By eating the forbidden fruit Adam and Eve came to know in a way comparable to the knowledge of God (or in a manner in which He does, keeping in mind that God has never committed evil/sin). They acquired an objective awareness of all things both good and evil. Their sinful pain did become like God (Gen. 3:22). "Before they ate of the tree of knowledge, the man and his wife were like small children who know nought of what exists around them" (cf., Brown, 1979, p. 367).

The implications of these differences are far reaching: children in Levels I and II must be trained to

choose the good in life. As a result of Jesus' sinless nature, from infancy He could distinguish between good and evil, intellectually as well as spiritually. Humans, believers in particular, must learn to do the same.



## **Appendix C**

### **The Mentalistic Structures, Cognitive Components, Emotion and Education, Black Rose and DM Questionnaires**

#### **The Mentalistic Structures Questionnaire**

This survey is called the mentalistic structures questionnaire because it concentrates only on black and white issues within the United States. There are no right and wrong answers. If an answer is more yes than no check "A" for agree. If an answer is more no than yes check "D" for disagree. "WA" and "AA" represents White Americans and African Americans.

24. I would rather make my own decisions	A 92.481%
25. I would rather have others make decisions for me	D 96.241%
26. I feel as if I'm doing something wrong or bad when I oppose a WA's point of view	D 91.406%
27. AA are denied their equal rights in this country	A 77.778%
28. The AA's fate is in the hands of the WA	D 77.686%
29. I am not in control of my fate	D 64.844%
30. AA are denied human rights in this country	A 56.452%
31. WA do not see me as I see myself	A 89.147%

- |   |           |
|---|-----------|
| 32. WA stereotype AA in the U. S.   | A 88.034% |
| 33. WA think they know what is best for AA  | A 78.295% |
| 34. There is conflict between the way WA<br>and AA think  | A 92.188% |
| 35. I am taught to be proud of my race<br>in school   | A 64.286% |
| 36. If I want to get ahead in this country<br>I will have to discontinue my<br>relationship with many of my AA<br>associates              | D 86.364% |
| 37. I learned of the injustices done to AA<br>in this country through hearing or<br>talking to my relatives                               | A 55.738% |
| 38. Society's attitude towards me forces<br>me to do wrong sometimes  | D 77.863% |
| 39. America has fairly compensated the AA<br>for the injustices committed against<br>him  | D 81.197% |
| 40. WA prospers economically at the expense<br>of the AA  | A 79.167% |
| 41. I feel more comfortable when others<br>instruct me about what to do   | D 86.923% |
| 42. I would rather have some liberty in<br>determining how my classroom assignment<br>should be completed                                 | A 66.102% |
| 43. I would rather have an instructor tell<br>me exactly how he/she wants me to conduct<br>or complete an assignment                      | A 61.111% |
| 44. Sometimes I feel I am always trying<br>to please WA   | D 78.906% |
| 45. I believe that AA will get fairly<br>compensated for the time, effort, and<br>hard work they put into their education<br>in the U. S. | A 54.545% |
| 46. I expect to receive mostly good in this<br>life   | A 72.8%   |

47. I expect to receive mostly bad in this life D 93.6%
48. Sometimes I rebel against the system as a way of protecting my self-esteem D 56.78%
49. I have witnessed my parents or relatives suffer because of racism in America A 73.387%
50. I have the attitude that what ever happens to me in life will happen D 76.613%
51. I have heard my family members discussing how it used to be for AA in the U. S. years ago A 86.047%
52. I often have a feeling of helplessness but I try to hide it by pretending that I am happy D 81.452%
53. Sometimes I think of my life as if I'm an actor on stage acting out a role someone else wrote for me D 78.4%
54. I often feel I'm not living the kind of life I would like to, or desire to live D 52.756%
55. Sometimes, freedom as I define it, always seems to be just beyond my reach D 70.833%
56. Everyday seems the same for [to] me D 84.127%
57. Sometimes I feel that I'm locked into a bad situation and there's no way out. This is how I see my life sometimes D 72.441%
58. It frightens me to consider the kind of society in which I live A 74.219%
59. I become afraid when I consider how negative the WA's attitude is towards me or the other AA D 69.6%
60. If I were to be honest, I would have to admit that sometimes I think WA are correct when they say I or other AA are inferior to them D 90.244%
61. If I work hard, living as I do now will naturally lead me to the kind of life I would like to live in this country A 57.983%

62. I would like to live the American dream just as many other Americans do A 74.38%
63. Sometimes I feel as if I live in constant fear D 81.746%
64. Sometimes I feel that this country is trying to brainwash me, or I'm being brainwashed here D 61.667%
65. Sometimes I feel that my teachers are trying to force their ideas upon me D 69.565%
66. The curriculum I receive in school sometimes makes me feel as if someone else is trying to control my will (or mind) through it D 69.828%
67. Christianity has always been a tool that WA has used to try and subjugate AA in the U. S. D 66.102%
68. I and all other AA are alike D 95.238%
69. I truly believe that I have an identity separate from that which the WA has assigned to me A 84.426%
70. I feel defenseless against the power of WA in this country D 84.677%
71. I trust other members of my race A 66.957%
72. I trust WA in this country D 66.667%
73. I feel uncertain of myself when I perform better than a WA (uncertain or unsure) D 94.167%
74. I intend to escape my fate in this country, which is the fate of an AA D 54.902%
75. I can envision a time when Whites and Blacks will live in peace and harmony in this country A 58.824%
76. In this country the AA's need to survive is greater than the WA forceful acts against him A 76.786%
77. AA should reject "Uncle Tom" leaders(ship) A 76.991%

78. The AA in his struggle for equal rights will have to stick together (as a race) politically and learn to manipulate (use) the political system in the U. S. A 83.036%
79. The political system in America is a potential power source into which the AA needs to tap A 78.947%
80. The political system in this country tries to force AA to remain at a lower social and economic status A 77.119%
81. Most of our political system is made up of WA males, they hold most of the political offices in this country A 94.167%
82. WA in this country have access to more of the opportunities this country has to offer than do AA A 92.562%
83. There is a conflict in the way I think and the way most of my teachers think D 54.717%
84. I have very little faith in the educational system in America: it does not have my best interest as its primary goal 50/50%
85. I see education as a means of getting mostly everything I want in this country A 57.851%
86. Education has the potential or power to rid this country of racism A 54.098%
87. Education has the potential or power to rid this country of the social and economic barriers that exist between WA and AA today A 58.197%
88. To suffer in this life is good because whoever suffers in this life will be rewarded in the next life D 65.421%
89. WA think that AA have a "Place" in this country and most of them try to keep them in it A 73.913%
90. Most of the time I am so involved in trying to survive daily that I don't have time to think about becoming a leader in my community D 58.621%

91. This society keeps sending me the message that I am not good enough to participate in the benefits of it which naturally come to those of the white race A 55.652%
92. I feel powerless to change the events that have happened in my life and the events that will occur in my life in the future D 83.898%
93. I believe the real source of racism in this country is WA fear of the AA A 70.339%
94. Where I live there is a sense of community among the residents who live there A 60.177%
95. I want to live another kind of life D 73.214%
96. The political system in America discriminates against AA A 83.478%
97. I feel that one of the main objects of our political system is to control AA in the U. S. A 62.727%
98. I believe in (agree with) "White Supremacy" D 98.291%
99. AA need to define for themselves who they are, they also need to define for the rest of the world who they are A 80.702%
100. AA need to reject the definition and identity WA have ascribed (given) to them A 83.333%
101. I have to reject "whiteness" if I want to keep (preserve) my "blackness" D 75.439%
102. In my own way I demand that WA respect me A 81.579%
103. I personally reject the role WA have assigned to me in this country A 76.364%
104. It grieves me to see the way most of my people live in this country: poverty and suffering A 93.043%
105. Christianity is the enemy of the AA D 93.103%

- |   |           |
|---|-----------|
| 106. AA need to set their own goals in life and decide for themselves what their values are   | A 88.496% |
| 107. Almost everything in this society tells me that I am inadequate  | D 66.364% |
| 108. I sometimes feel that WA are always trying to tell me what to do   | A 52.252% |
| 109. Sometimes I do feel inferior to WA   | D 73.451% |
| 110. I am proud to be an AA or Black American   | A 96.552% |
| 111. I agree with the statement: 'Black is Beautiful'   | A 90.598% |
| 112. I am determined to survive as an AA in this country  | A 96.522% |
| 113. I see the future of AA in the U. S. as on an incline, that is getting better   | A 59.459% |
| 114. I see the future of AA in the U. S. as on a decline, that is getting worse   | D 53.636% |
| 115. If AA aren't alert in this country they will be in a condition that is worse than slavery was  | A 71.053% |
| 116. I dream of starting my own business in this country one day  | A 68.103% |
| 117. As a race, AA need their own independent economic resources so they won't always have to look to WA before they can start their own businesses | A 85.841% |
| 118. One day I will have my own independent economic resources in this country  | A 70%     |
| 119. To date, AA have been slow to organize economically in the U. S. because of a lack of trust among themselves                                   | A 83.178% |
| 120. AA can be very competitive among themselves  | A 93.103% |
| 121. Too often AA focus on what WA wants them to do rather than what they want to do themselves   | A 72.174% |

122. What do you want to be when you graduate from high school or college (fill in the blank)
-



### Cognitive Components Questionnaire

There are no right or wrong answers to these questions or statements. Please check "A" if you agree with the statement and "D" if you do not agree (disagree) with the statement. If you agree with the statement more than you disagree with it then check "A." If you disagree with the statement more than you agree with it then check "D." Please answer each question with an agree or disagree answer by checking the correct space.

- |   |           |
|---|-----------|
| 1. Most of the time when I am in school, I am happy   | A 74.453% |
| 2. When I am happy in school, I like to do my school work   | A 83.212% |
| 3. When I am sad at school, it is harder for me to do my school work                              | A 61.029% |
| 4. Sometimes my teacher says things I don't like and it makes me dislike my school work or school | D 52.206% |
| 5. Somedays when I am in class, I am having so much fun that I don't want the class to end        | A 63.971% |
| 6. I like doing school work when I am learning things about myself that make me feel good         | A 81.752% |
| 7. It is easier for me to do my school work when I feel happy                                     | A 91.971% |
| 8. Sometimes my teacher says things in class about me that I do not agree with                    | A 54.745  |
| 9. Sometimes I wonder why my teacher doesn't see things [life] as I see them                      | A 67.407% |

- |   |           |
|---|-----------|
| 10. Sometimes my teacher says things about me or my race in the classroom that I do not like, things that makes me sad or angry         | D 56.934% |
| 11. I don't feel like doing my school work when the teacher or a student makes me angry or sad in the classroom                         | A 60.294% |
| 12. Most of the time when I am in school, I feel sad  | D 70.37%  |
| 13. Thinking is so easy for me when I like what I am studying   | A 91.971% |
| 14. I like going to school because if I do I can become anything I want to when I am older or graduate                                  | A 85.075% |
| 15. I can't wait to get to school in the mornings because I learn things there that make life better for me at home                     | A 54.815% |
| 16. My teacher doesn't always know what is best for me  | A 70.588% |
| 17. What I want to read about in school is how I can become a better person and what I can do to become the kind of person I want to be | A 77.941% |
| 18. I don't concentrate well on things I don't want to read   | A 67.883% |
| 19. Its exciting for me to read about something that interests me   | A 91.971% |
| 20. Learning feels good when I'm happy  | A 82.482% |
| 21. I want to go to college when I graduate from high school  | A 96.212% |
| 22. Sometimes my teacher lets me talk about the way I feel about certain things and it makes me like school better                      | A 67.153% |
| 23. When I am forced to do whatever the teacher says, it makes me dislike school  | A 56.204% |

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|--|-----------|
| 24. I hate school when I angry and my teacher keeps bothering me; he or she just want leave me alone         | A 54.074% |
| 25. I like reading about things that happen where I live or in my neighborhood                               | A 75%     |
| 26. I can't remember much when I read about people that don't interest me                                    | A 54.745% |
| 27. I like reading about other people and far away places  | A 78.102% |
| 28. I learn things at school that help me to understand what is happening in my home better                  | A 77.778% |
| 29. The more I'm at school, the more I learn about what my parent(s) do at work                              | A 54.412% |
| 30. I really want to learn when I see in my home how I can use the material we study at school               | A 84.848% |
| 31. Some of the things we talk about in school I see my parents doing at home or talking about at home       | A 65.926% |
| 32. If I make A's and B's in school I can get any kind of job I want when I graduate                         | A 69.63%  |
| 33. Learning feels bad when I'm sad  | A 54.887% |
| 34. I have so many problems at home that I can't concentrate on school work, it won't help me at home anyway | D 63.704% |
| 35. I can't do my school work for thinking about other things that happen to me outside of school            | A 55.556% |
| 36. My teacher always knows what is best for me  | D 63.235% |
| 37. To be honest, its hard for me to do school work that I don't like or don't have much interest in         | A 73.723% |

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|---|-----------|
| 38. Its hard for me to choose to do what my teacher says when I don't agree with him or her   | A 70.896% |
| 39. Most of the time I just choose to do what I want to do anyway or what I think is best for me to do  | A 55.474% |
| 40. Most of the time I choose to do what I think is right for me  | A 82.963% |
| 41. When I feel good in school I think better   | A 91.971% |
| 42. My teacher doesn't always know what makes me like school  | A 87.407% |
| 43. My parents are proud of me when I do good work in school  | A 93.284% |
| 44. The way I see it, if education can't help me right now I don't need it  | D 72.794% |
| 45. Sometimes I don't like to read books at school because they are always written about somebody else's life and have very little to say about my life | D 51.825% |
| 46. When I do something that pleases my teacher I want to do it again   | A 82.836% |
| 47. When my teacher does something that pleases me, I would like for him or her to keep doing it because it makes me like school better                 | A 81.481% |
| 48. I have felt so bad in school that I have wanted to leave and never return again   | D 54.412% |
| 49. I have seen pictures of other people in books, people different from myself, which have made me so angry that I hated that book or hated reading it | D 73.333% |
| 50. Getting an education is very important to me  | A 93.333% |
| 51. Getting an education is not very important to me  | D 88.148% |
| 52. My family wants me to get an education  | A 94.737% |

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|---|-----------|
| 53. I act exactly the way I want to act in school   | A 52.941% |
| 54. Sometimes I hate school but I don't tell anybody  | D 52.239% |
| 55. I like school much more than anyone thinks I do   | A 60%     |
| 56. It would be much easier for me to study my school work if I lived around other kinds of people or maybe in another neighborhood                 | D 53.285% |
| 57. Once I had a teacher that I thought disliked me and it made me so angry that I wouldn't do anything or very little that he or she told me to do | D 55.882% |
| 58. When I'm given a school assignment that I like or that interest me, I put more time and work into it than is required                           | A 85.926% |
| 59. It makes me feel good when I do good work in school   | A 94.118% |
| 60. My teacher doesn't always know what makes me dislike school   | A 73.134% |
| 61. It makes me sad when I get bad grades in school   | A 89.63%  |
| 62. It is hard for me to choose to do what my teacher tells me to do when I think it will make me feel bad or sad                                   | A 66.165% |
| 63. When I feel bad in school its harder for me to think  | A 76.866% |
| 64. When I am sad all I can do is think about what is happening to me at the present time or "right now"  | A 74.242% |
| 65. I want to run away from school when I'm sad because the other students make me feel bad about myself or that something is wrong with me         | D 55.97%  |

66. Sometimes I'm happier in school than I  
am at home

A 57.895%

67. What makes you dislike school (fill in the blank)?  
\_\_\_\_\_

68. Why do you like school (fill in the blank)?  
\_\_\_\_\_

69. Write exactly what you are feeling now \_\_\_\_\_  
\_\_\_\_\_

### Emotion and Education Questionnaire

There is no wrong or right answer to the following questions. Please indicate if you have ever felt these emotions "feelings" while interacting with an administrator, curriculum, instructor, or student of another race while attending school. Please place a check in the box besides the person, department or thing of your choice. You may check all four if you like.

A= Administration

C= Curriculum

I= Instructor

S= Student other than your own race

Example:

(emotion listed)                      (definition)

1. Abandoned:                      forsaken

A	C	I	S
<hr/>			

### Questionnaire

1. Pleasure: agreeable, giving pleasure

A 40	C 43	I 56	S 60
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2. Abandoned: forsaken

A 36	C 24	I 40	S 29
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## 3. Alone: apart from others

A 31	C 28	I 21	S 46
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## 4. Afraid: filled with fear

A 28	C 26	I 21	S 28
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## 5. Angry: vexation or resentment

A 41	C 37	I 49	S 47
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## 6. Proud: great self esteem

A 27	C 38	I 49	S 44
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## 7. Anxious: anxiety or worry

A 26	C 45	I 43	C 33
------	------	------	------

## 8. Satisfied: gratified

A 32	C 48	I 56	S 51
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## 9. Arrogance: a feeling of superiority, dignity, or power

A 23	C 23	I 29	S 40
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## 10. Blessed: blissful, joyful

A 35	C 38	I 54	S 47
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## 11. Bold: venturesome

A 20	C 31	I 37	S 38
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## 12. Confused: perplexing

A 44	C 55	I 47	S 33
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**13. Thankful: grateful**

<b>A 38</b>	<b>C 36</b>	<b>I 65</b>	<b>S 54</b>
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**14. Courageous: brave**

<b>A 23</b>	<b>C 28</b>	<b>I 35</b>	<b>S 37</b>
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**15. Defenseless: unable to protect yourself**

<b>A 34</b>	<b>C 25</b>	<b>I 33</b>	<b>S 25</b>
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**16. Delight: a high degree of gratification and/or pleasure**

<b>A 28</b>	<b>C 36</b>	<b>I 49</b>	<b>S 46</b>
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**17. Dread: a feeling of fear**

<b>A 35</b>	<b>C 34</b>	<b>I 34</b>	<b>S 18</b>
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**18. Uplifted: spiritually elevated**

<b>A 18</b>	<b>C 28</b>	<b>I 42</b>	<b>S 36</b>
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**19. Forsaken: alone**

<b>A 33</b>	<b>C 25</b>	<b>I 26</b>	<b>S 36</b>
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**20. Low: a decrease in spirit or self esteem**

<b>A 22</b>	<b>C 25</b>	<b>I 32</b>	<b>S 28</b>
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**21. Hope: desire with expectation**

<b>A 25</b>	<b>C 42</b>	<b>I 54</b>	<b>S 42</b>
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**22. Lacking: deficient in spirit**

<b>A 23</b>	<b>C 32</b>	<b>I 37</b>	<b>S 25</b>
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## 23. Trust: assurance in another person's integrity

A 22                      C 22                      I 55                      S 48

## 24. Loathe: great dislike

A 29                      C 32                      I 33                      S 34

## 25. Rejoice: gladness

A 19                      C 30                      I 42                      S 50

## 26. Safe: free from risk or harm

A 29                      C 15                      I 39                      S 38

## 27. Relief: having received aid or comfort

A 32                      C 20                      I 50                      S 48

T 793                      T 866                      I 1128                      S 1061

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T = Total number of frequencies

## 28. Do the positive or good emotions make you like school more or better?

Yes 89.90%

No 10.10%

## 29. Do you learn more when you are experiencing (feeling) the positive emotions or the negative emotions?

Positive 82.47%

Negative 17.53%

## 30. Do the negative emotions make you like school worse or less?

Yes 73.96%

No 26.04%

# **Black Rose Questionnaire**

**Picture in your mind a "Black Rose."**

**a1. How does this black rose look to you (e.g., pretty,  
ugly, etc.)?**

**THE SENSES**

**PERCEPTION**

**a2. Can you tell me why?**

**PERCEPTION**

**ADDITIONAL INFORMATION**

**b. What do you think about this black rose?**

**INTELLECT**

**c. How does this black rose make you feel?**

**EMOTION**

**d. Do you want to get closer or farther away from this  
black rose?**

**VALENCE**

**WILL**

**BEHAVIOR**

**e. Can you tell me why?**

**WILL**

**ADDITIONAL INFORMATION**

**f. What do you think of the black rose now?**

**ADDITIONAL INFORMATION**

**Demographics Questionnaire**

1. \_\_\_\_\_
2. Age \_\_\_\_\_
3. Grade Level 3 4 5 6 7 8 9 10 11 12 13 14 & over \_\_\_\_\_  
(please circle one or fill in the blank)
4. Sex M \_\_\_\_\_ F \_\_\_\_\_
5. Marital Status  
Single \_\_\_\_\_  
Married \_\_\_\_\_  
Divorced \_\_\_\_\_  
Widower \_\_\_\_\_
6. Are you a U. S. citizen? Yes \_\_\_\_\_ No \_\_\_\_\_
7. Are you an immigrant to the U. S.?
8. If you are an immigrant, why did you move to the U. S.?  
\_\_\_\_\_
9. Where were you born? \_\_\_\_\_
10. How long have you lived in the U. S.? \_\_\_\_\_
11. Do you speak more than one language Yes \_\_\_\_\_ No \_\_\_\_\_
12. Give the other language that you speak \_\_\_\_\_
13. What is your race?  
African American \_\_\_\_\_  
Chinese \_\_\_\_\_  
East Indian \_\_\_\_\_  
Hispanic \_\_\_\_\_  
Japanese \_\_\_\_\_

Korean\_\_\_\_\_

Native American\_\_\_\_\_

White American\_\_\_\_\_

Other\_\_\_\_\_

**14. What is your religion?**

Atheist\_\_\_\_\_

Buddhist\_\_\_\_\_

Christian\_\_\_\_\_

Christian Science\_\_\_\_\_

Evolutionist\_\_\_\_\_

Humanist\_\_\_\_\_

Jehovah Witness\_\_\_\_\_

Islam\_\_\_\_\_

**15. Most of my schoolmates are of another race**

Yes\_\_\_\_\_ No\_\_\_\_\_

**16. Please give the predominate race of your schoolmates**

(the race with the most people)\_\_\_\_\_

**17. How many of your parents are living in your home?**

Mother\_\_\_\_\_

Father\_\_\_\_\_

Both\_\_\_\_\_

**18. How many siblings are living in your home?**

Sisters\_\_\_\_\_

Brothers\_\_\_\_\_

**19. What kind of work does your parents do?**

Mother\_\_\_\_\_

Father \_\_\_\_\_

20. What city do you live in? \_\_\_\_\_

21. What is the name of the school you attend? \_\_\_\_\_  
\_\_\_\_\_

22. What city is your school located in? \_\_\_\_\_

23. Have you ever quit school? \_\_\_\_\_

**Appendix D**  
**Tables for Research Findings**

**Table D1**

**Mentalistic Structures Questionnaire: Age level**

<b><u>Age in Years</u></b>	<b><u>Frequency</u></b>	<b><u>Percentage</u></b>
11	3	6.818
12	6	13.636
13	3	6.818
14	5	11.363
15	4	9.090
16	1	2.272
19	1	2.272
20	2	4.545
22	2	4.545
23	1	2.272
24	1	2.272
25	1	2.272
26	1	2.272
27	2	4.545
29	3	6.818
30	4	9.090
31	4	9.090
32	3	6.818
33	3	6.818
34	3	6.818
35	3	6.818
36	3	6.818
37	1	2.272
38	4	9.090
39	3	6.818
40	3	6.818
41	2	4.545
42	2	4.545
43	4	9.090
44	5	11.363
45	2	4.545
46	4	9.090
47	2	4.545
48	6	13.636

Table D1

Mentalistic Structures Questionnaire: Age level

Age in Years	Frequency	Percentage
49	2	24.545
51	7	15.909
52	5	11.363
53	2	4.545
54	1	2.272
55	2	4.545
56	1	2.272
57	3	6.818
58	1	2.272
64	1	2.272
67	2	4.545

Valid Cases 124 Missing Cases 11

Table D2

Mentalistic Structures Questionnaire: Grade Level

Value Label	Frequency	Percentage
Forth Grade	1	.775
Seventh Grade	7	5.426
Eighth Grade	6	4.651
Ninth Grade	3	2.326
Tenth Grade	5	3.876
Eleventh Grade	3	2.326
Twelfth Grade	29	22.481
Thirteenth Grade>	75	58.14

Valid Cases 129 Missing Cases 6

&gt; Equal to or greater than



Table D3

Mentalistic Structures Questionnaire: Gender

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Male	62	47.328
Female	69	52.672
<u>Valid Cases 131    Missing Cases 4</u>		

Table D4

Mentalistic Structures Questionnaire: Marital Status

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Single	56	42.748
Married	68	51.908
Divorced	6	4.58
Widowed	1	.763
<u>Valid Cases 131    Missing Cases 4</u>		

Table D5

**Mentalistic Structures Questionnaire: Place of birth**

<b>Value Label</b>	<b>Frequency</b>	<b>Percentage</b>
Alabama	6	4.762
Arizona	1	.794
Arkansas	5	3.968
California	40	31.746
Colorado	1	.794
D. C.	1	.794
Florida	2	1.587
Georgia	3	2.381
Hawaii	1	.794
Illinois	5	3.968
Indiana	2	1.587
Louisiana	17	13.492
Maryland	2	1.587
Michigan	3	2.381
Mississippi	6	4.762
Missouri	1	.794
New York	6	4.762
No. Carolina	3	2.381
Ohio	1	.794
Oklahoma	4	3.175
Panama	1	.794
Puerto Rico	1	.794
Pennsylvania	2	1.587
So. Carolina	2	1.587
Tennessee	5	3.968
Texas	4	3.175
Virginia	1	.794

Valid Cases 126 Missing Cases 9

Table D6

**Mentalistic Structures Questionnaire: Race**

<b>Value Label</b>	<b>Frequency</b>	<b>Percentage</b>
African-American	135	100

Valid Cases 135 Missing Cases 0

Table D7

**Mentalistic Structures Questionnaire: Religion**

<b>Value Label</b>	<b>Frequency</b>	<b>Percentage</b>
Christian	129	100
Other	0	0

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**Valid Cases 129    Missing Cases 6**

Table D8

**Mentalistic Structures Questionnaire: School Location**

<b>Value Label</b>	<b>Frequency</b>	<b>Percentage</b>
Alabama	3	2.703
Arkansas	2	1.802
Carson	1	.901
Cerritos	1	.901
Compton	2	1.802
D. C.	1	.901
Inglewood	2	1.802
La Mirada	8	7.207
Long Beach	1	.901
Los Angeles	59	53.153
Louisiana	3	2.703
Maryland	2	1.802
Michigan	1	.901
Mississippi	2	1.802
New York	3	2.703
Ohio	2	1.802
Oklahoma	3	2.703
Oregon	1	.901
Palos Verdes	2	1.802
Panama	1	.901
Paramount	1	.901
Pennsylvania	1	.901
Puerto Rico	1	.901
Tennessee	3	2.703
Texas	1	.901
Torrance	1	.901
Washington	1	.901
Watts	1	.901
Westchester	1	.901

---

**Valid Cases 112    Missing Cases 23**

Table D9

Cognitive Components Questionnaire: Age Level

<u>Age in Years</u>	<u>Frequency</u>	<u>Percentage</u>
7	4	2.92
8	7	5.109
9	26	18.978
10	31	22.628
11	18	13.139
12	9	6.569
13	7	5.109
14	6	4.38
15	3	2.19
16	2	1.46
17	2	1.46
19	3	2.19
20	3	2.19
21	1	.73
23	1	.73
24	1	.73
25	2	1.46
26	2	1.46
29	2	1.46
30	1	.73
31	1	.73
35	2	1.46
36	1	.73
38	1	.73
48	1	.73

---

Valid Cases 137    Missing Cases 0

Table D10

Cognitive Components Questionnaire: Years in school

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Second Grade	4	2.92
Third Grade	6	4.38
Fourth Grade	29	21.168
Fifth Grade	35	25.547
Sixth Grade	15	10.949
Seventh Grade	6	4.38
Eight Grade	8	5.839
Ninth Grade	5	3.65
Tenth Grade	3	2.19
Eleventh Grade	4	2.92
Twelfth Grade	1	.73
Thirteenth Grade	21	15.328

Valid Cases 137 Missing Cases 0

Table D11

Cognitive Components Questionnaire: Gender

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Male	65	47.445
Female	72	52.555

Valid Cases 137 Missing Cases 0

Table D12

Cognitive Components Questionnaire: Marital Status

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Single	131	95.62
Married	6	4.38
Divorced	0	0
Widowed	0	0

Valid Cases 137 Missing Cases 0

Table D13

Cognitive Components Questionnaire: Place of birth

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Africa	2	1.481
California	90	66.667
Canada	2	1.481
Caribbean	1	.741
El Salvador	1	.741
Europe	1	.741
Florida	1	.741
Georgia	2	1.481
Guatemala	1	.741
Hong kong	1	.741
Illinois	2	1.481
India	2	1.481
Japan	2	1.481
Kansas	1	.741
Korea	8	5.926
Maryland	1	.741
Mexico	5	3.704
Michigan	1	.741
Minnesota	1	.741
New Jersey	1	.741
New Orleans	1	.741
New York	3	2.222
Nicaragua	1	.741
Ohio	1	.741
Panama	1	.741
Puerto Rico	1	.741
Texas	1	.741
<hr/>		
Valid Cases 135    Missing Cases 2		

Table D14

Cognitive Components Questionnaire: Race

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
African	1	.73
African-American	79	57.664
African-Caribbean	1	.73
Asian	17	12.409
East Indian	3	2.19
Hispanic	32	23.358
White American	4	2.92

Valid Cases 137 Missing Cases 0

Table D15

Cognitive Components Questionnaire: Religion

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Christian	96	98.969
Other	1	1.031

Valid Cases 97 Missing Cases 40

Table D16

Cognitive Components Questionnaire: School Location

Value Label	Frequency	Percentage
Anaheim	1	.741
Baldwin Park	2	1.481
Bel Air	1	.741
Bell	1	.741
Burbank	1	.741
Carson	1	.741
Chino	1	.741
Diamond Bar	5	3.704
Fullerton	3	2.222
Gardena	1	.741
Glendale	4	2.963
Granada Estates	2	1.481
Hacienda Heights	1	.741
Inglewood	1	.741
La Habra	1	.741
La Mirada	23	17.037
Los Angeles	64	47.407
Mar Vista	1	.741
New Orleans	1	.741
North Hollywood	1	.741
Pasadena	2	1.481
Placentia	1	.741
Palms Spring	1	.741
Plumso	1	.741
Pomona	1	.741
San Fernando	2	1.481
San Juan Capistrano	1	.741
Santa Monica	1	.741
Tarzana	1	.741
Torrance	1	.741
Van Nuys	1	.741
West Covina	1	.741
Westchester	1	.741
Whittier	2	1.481
Woodland Hills	1	.741
Yorba Linda	1	.741

Valid Cases 135 Missing 2

All cities listed are located in California.



Table D17

Emotion and Education Questionnaire: Age Level

<u>Years Of Age</u>	<u>Frequency</u>	<u>Percentage</u>
Ten	1	1.471
Eleven	5	7.353
Twelve	15	22.059
Thirteen	10	14.706
Fourteen	9	13.235
Sixteen	2	2.941
Seventeen	3	4.412
Eighteen	1	1.471
Nineteen	3	4.412
Twenty	3	4.412
Twenty One	2	2.941
Twenty Four	1	1.471
Thirty One	3	4.412
Thirty Three	1	1.471
Thirty Four	1	1.471
Thirty Five	1	1.471
Thirty Seven	1	1.471
Thirty Eight	2	2.941
Forty One	1	1.471
Forty Eight	2	2.941
Fifty Seven	1	1.471

Valid Cases 68 Missing Cases 32

Table D18

Emotion and Education Questionnaire: Grade level

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Seventh Grade	15	21.127
Eighth Grade	12	16.901
Ninth Grade	3	4.225
Tenth Grade	3	4.225
Eleventh Grade	2	2.817
Twelfth Grade	6	8.451
Thirteenth Grade	23	32.394

Valid Cases 64 Missing Cases 36

Table D19

Emotion and Education Questionnaire: Gender

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Male	31	43.662
Female	40	56.338

Valid Cases 71 Missing Cases 29

Table D20

Emotion and Education Questionnaire: Race

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
African	1	1.031
African-American	50	51.546
Asian	16	16.495
East Indian	3	3.093
Hispanic	24	24.742
White American	3	3.093

Valid Cases 97 Missing Cases 3

Table D21

Emotion and Education Questionnaire: Religion

<u>Value Label</u>	<u>Frequency</u>	<u>Percentage</u>
Christian	74	98.667
Other	1	1.333

Valid Cases 75 Missing Cases 25

Table D22

**Emotion and Education Questionnaire: Type of School**  
**attending**

<b>Value Label</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Religious</b>	<b>24</b>	<b>32.432</b>
<b>None Religious</b>	<b>50</b>	<b>67.568</b>
<b>Valid Cases 74   Missing Cases 26</b>		

Table D23

Black Rose Questionnaire: Race

<u>Race</u>	<u>Frequency</u>	<u>Percentage</u>
African	4	1.86
African-American	100	46.512
Asian	17	7.907
East Indian	2	.93
Hispanic	34	15.814
Native American	1	.465
White American	55	25.581
White European	2	.93
<hr/>		
Valid Cases 215    Missing Cases 3		

Table D24

Mentalistic Structures: Answers to Original Key

Questions 1 to 23: fill ins

24	D	46	D	68	A	90	A	112	A
25	A	47	A	69	D	91	A	113	A
26	A	48	A	70	A	92	A	114	A
27	A	49	A	71	D	93	A	115	A
28	A	50	A	72	D	94	A	116	A
29	A	51	A	73	A	95	A	117	A
30	A	52	A	74	A	96	A	118	A
31	A	53	A	75	D	97	A	119	A
32	A	54	A	76	A	98	D	120	A
33	A	55	A	77	A	99	A	121	A
34	A	56	A	78	A	100	A		
35	D	57	A	79	D	101	A		
36	A	58	A	80	A	102	A		
37	A	59	A	81	A	103	A		
38	A	60	A	82	A	104	D		
39	D	61	A	83	A	105	A		
40	A	62	A	84	A	106	A		
41	A	63	A	85	D	107	A		
42	D	64	A	86	D	108	A		
43	A	65	A	87	D	109	A		
44	A	66	A	88	A	110	A		
45	D	67	A	89	A	111	A		

Table D25

Mentalistic Structures Questionnaire: Age group comparisons  
with the original key

QN	OK	<30	31>
1 = 24	D	A	A
2	A	D	D
3	A	D	D
4	A	A	A
5	A	D	D
6	A	D	D
7	A	A	A
8	A	A	A
9	A	A	A
10	A	A	A
11	A	A	A
12	D	A	A
13	A	D	D
14	A	D	A
15	A	D	D
16	D	D	D
17	A	A	A
18	A	D	D
19	D	A	A
20	A	A	D
21	A	D	D
22	D	D	D
23	D	A	A
24	A	D	D
25	A	D	D
26	A	A	A
27	A	D	D
28	A	A	A
29	A	D	D
30	A	D	D
31	A	D	D
32	A	D	D
33	A	D	D
34	A	D	D
35	A	A	A
36	A	D	D
37	A	D	D
38	A	A	A
39	A	A	A

Table D25

Mentalistic Structures Questionnaire: Age group comparisons  
with the original key

QN	OK	<30	31>
40	A	D	D
41	A	D	D
42	A	D	D
43	A	D	D
44	A	D	D
45	A	D	D
46	D	A	A
47	A	D	D
48	D	A	A
49	D	D	D
50	A	D	D
51	A	A	A
52	D	A	A
53	A	A	A
54	A	A	A
55	A	A	A
56	D	A	A
57	A	A	A
58	A	A	A
59	A	A	A
60	A	D	A/D
61	A	A	D
62	D	A	A
63	D	A	A
64	D	A	A
65	A	D	D
66	A	A	A
67	A	D	D
68	A	A	A
69	A	D	D
70	A	A	A
71	A	A	D
72	A	D	D
73	A	A	A
74	A	A	D
75	D	D	D
76	A	A	A
77	A	A	A
78	A	D	D

Table D25

**Mentalistic Structures Questionnaire: Age group comparisons with the original key**

QN	OK	<30	31>
79	A	A	A
80	A	A	A
81	D	A	A
82	A	D	D
83	A	A	A
84	A	D	D
85	A	A	A/D
86	A	D	D
87	A	A	A
88	A	A	A
89	A	A	A
90	A	A	A
91	A	A	D
92	A	A	A
93	A	A	A
94	A	A	A
95	A	A	A
96	A	A	A
97	A	A	A
98	A	A	A

Valid Cases 98 Missing Cases 0

QN = Questionnaire Number

A = Agree

D = Disagree

QN 1 = Question 24 on Questionnaire

OK = Original Key Answer

< = Equal to or less than

> = Equal to or greater than



Table D26.

**Black Rose Questionnaire: Matrix Correlation**

<b>Variable Pairs</b>	<b>n</b>	<b>r</b>
Perception & Emotion	217	.354*
Perception & Race	215	.N.S.
Perception & Valence	217	.509*
Perception & Intellect	218	.325*
Intellect & Emotion	217	.468*
Intellect & Perception	218	.325*
Intellect & Race	215	.N.S.
Intellect & Valence	217	.375*
Emotion & Race	214	.N.S.
Emotion & Valence	216	.455*
Emotion & Intellect	217	.468*
Emotion & Perception	217	.354*
Valence & Emotion	216	.455*
Valence & Perception	217	.509*
Valence & Intellect	217	.375*
Valence & Race	214	.N.S.
Race & Emotion	214	.N.S.
Race & Perception	215	.N.S.
Race & Intellect	215	.N.S.
Race & Valence	214	.N.S.

\* indicates significance at .05 alpha level

N.S. = No significance at .05 alpha level

Table D27

**Correlations between Numbers 20 and Positive Questions on the Cognitive Components Questionnaire.**

Numbers	mc	n	r	FD Agree
1 E, Ed	0	137	.170	74.453
2 E, I	0	137	.307*	83.212
5 E, Ed, I	1	136	.295*	63.971
6 E, P, I	0	137	.279*	81.752
7 E, I	0	137	.358*	91.971
13 I, P	0	137	.358*	91.971
14 E, P, D	3	134	.351*	85.075
15 D	2	135	.317*	54.815
17 P, Ed	1	136	.265*	77.941
19 E, P, I	0	137	.288*	91.971
21 Info	5	132	.009	96.212
22 P, Ed, E	0	137	.209*	67.153
25 E, I	1	136	.267*	75
27 E, I	0	137	.22*	78.102
28 D	2	135	.326*	77.778
29 D	1	136	.312*	54.412
32 Ed, P	2	135	.156	69.63
36 Ed, P	1	136	.153	63.235
40 W, P, B	2	135	.161	82.963
41 E, I	0	137	.358*	91.971
43 Info	3	134	.194	93.284
46 B, E	3	134	.213*	82.836
47 E, B, Ed	2	135	.327*	81.481
50 Ed, P,	2	135	.186	93.333
52 Info	4	133	.248*	93.737
55 E, Ed, P	2	135	.332*	60
58 I P E B W	2	135	.167	85.926
59 Info	1	136	.137	94.118
61 Info	2	135	-.025	89.63
62 W, I, E	4	133	-.033	66.165
66 Info	4	133	.214*	57.895

\* Coefficient was significant at .05 alpha level

mc = Missing Cases

FD = Frequency Distribution

Table D28

**Correlations between Numbers 33 and Negative Questions on the Cognitive Components Questionnaire.**

Numbers	mc	n	r	FD Agree	Disagree
4 E, P, ED	5	132	.205*	52.206	D
9 P, Ed	6	131	.277*	67.407	A
10 P, E	4	133	.253*	56.934	D
11 I, E	5	132	.367*	60.294	A
12 E, Ed, Info	6	131	.254*	70.37	D
24 E, Ed, B	6	131	.291*	54.074	A
34 Info	5	132	.234*	63.704	D
35 Info	5	132	.22*	55.556	A
37 I, E, P, B	4	133	.196*	73.723	A
38 W, P	7	130	.223*	70.896	A
48 Ed, E, Info	4	133	.198*	54.412	D
60 Ed, P	5	132	.227*	73.134	A
63 E, I	6	131	.362*	76.866	A
65 Ed, E	6	131	.22*	55.97	D

\* Coefficient was significant at .05 alpha level

mc = Missing Cases

FD = Frequency Distribution

A = Agree

D = Disagree

E = Emotion

P = Perception

Ed = Education

I = Intellect

B = Behavior

W = Will

Table D29

**Comparative FD Score between African Americans, Asians & Others, and Hispanics on the Cognitive Components Questionnaire**

QN	Frequency	Mode	AA	A & O	H
1	A		A	A	A
2	A		A	A	A
3	A		A	A	A
4	D		A	D	D
5	A		A	A	A
6	A		A	A	A
7	A		A	A	A
8	A		D	A	A
9	A		A	A	A
10	D		D	D	D
11	A		A	D	A
12	D		D	D	D
13	A		A	A	A
14	A		A	A	A
15	A		A	D	A
16	A		A	A	A
17	A		A	A	A
18	A		A	A	A
19	A		A	A	A
20	A		A	A	A
21	A		A	A	A
22	A		A	A	A
23	A		A	A	A
24	A		A	D	A
25	A		A	A	A
26	A		A	D	A
27	A		A	A	A
28	A		A	A	A
29	A		A	D	A
30	A		A	A	A
31	A		A	A	A
32	A		A	D	A
33	A		A	D	D
34	D		D	D	D
35	A		A	D	A
36	D		A	D	D
37	A		A	A	A
38	A		A	A	A
39	A		A	D	A

Table D29

**Comparative FD Score between African Americans, Asians & Others, and Hispanics on the Cognitive Components Questionnaire**

QN	Frequency Mode	AA	A & O	H
40	A	A	A	A
41	A	A	A	A
42	A	A	A	A
43	A	A	A	A
44	D	D	D	D
45	D	A	D	A
46	A	A	A	A
47	A	A	A	A
48	D	D	D	A
49	D	D	D	D
50	A	A	A	A
51	D	D	D	D
52	A	A	A	A
53	A	D	A	A
54	D	A	D	D
55	A	A	D	A
56	D	A	D	D
57	D	D	D	A
58	A	A	A	A
59	A	A	A	A
60	A	A	A	A
61	A	A	A	A
62	A	A	A	A
63	A	A	A	A
64	A	A	A	A
65	D	A	A	D
66	A	A	A	A

AA = African American

AS & O = Asian and Others

H = Hispanic

FD = Frequency Distribution

Table D30:

Black Rose: Somatic Aspects of Cognition

1. (a) it might look a little different but pretty
  - (b) it has its own inner beauty
  - (c) I would love to have a black rose
  - (d) it makes me proud that I'm black
  - (e) closer
  - (f) no
  - (g) the same as before
2. (a) ugly
  - (b) because it sounds strange. I've never seen a black rose
  - (c) I think it would be strange
  - (d) sick to my stomach
  - (e) farther from this black rose
  - (f) because if I saw black roses...I wouldn't get closer but farther
  - (g) I still think it's ugly
3. (a) beautiful
  - (b) because the rose buds meet and black is beautiful
  - (c) smart, beautiful, skipped a few grades
  - (d) beautiful
  - (e) closer because the closer I get the better I feel about myself
  - (f) to get to know it better

- (g) it's nice
4. (a) pretty, gorgeous, so fine
- (b) because the rose is me and Black is beautiful
- (c) the rose is smart, beautiful, skipped a few
- (d) beautiful
- (e) closer to it
- (f) so we can get closer
- (g) very sweet
5. (a) makes me feel like I lost something
- (b) because it reminds me of death
- (c) that it is hate
- (d) like I'm hurt
- (e) farther away
- (f) because I want a rose full of color
- (g) the same way
6. (a) ugly
- (b) because it symbolizes a great deal of sadness
- (c) I feel the same
- (d) sad
- (e) farther
- (f) because I want to be happy not sad
- (g) I still feel the same
7. (a) pretty
- (b) I rather like it to be another color
- (c) nothing
- (d) like my self

- (e) farther
  - (f) it's ugly
  - (g) I don't like it
8. (a) ugly
- (b) cause its black
  - (c) its ugly
  - (d) mad
  - (e) farther away
  - (f) cause I like light colored roses
  - (g) their ugly
9. (a) pretty, I'd rather another color
- (b) because I would like to be another color
  - (c) I do not like it
  - (d) terrible
  - (e) farther
  - (f) it's ugly
  - (g) it's great
10. (a) ugly
- (b) because I've always hated it
  - (c) it smells and it's ugly
  - (d) it makes me sick
  - (e) way farther
  - (f) because I hate black roses
  - (g) I still think that a black rose looks ugly

These are just ten examples of how African American children and youth responded to the Black Rose



Questionnaire. Mostly all of them used the first person singular and emotion words which entailed physical or mental illnesses. One child said "this black rose is making me loose my mind." Other participants said "the black rose make me feel crazy" and "I think that it is junky that's [sic] why...It make me throw up." Many of the children who made negative statements expressed them in terms of symptoms of physical illnesses. Many who had positive statements expressed them within a context of, or in conjunction with, phrases such as black is beautiful, the black flag, black and proud; these are terms born out of the Black conscious raising era, which is further evidence of its effect on the mentalistic structures of African Americans.

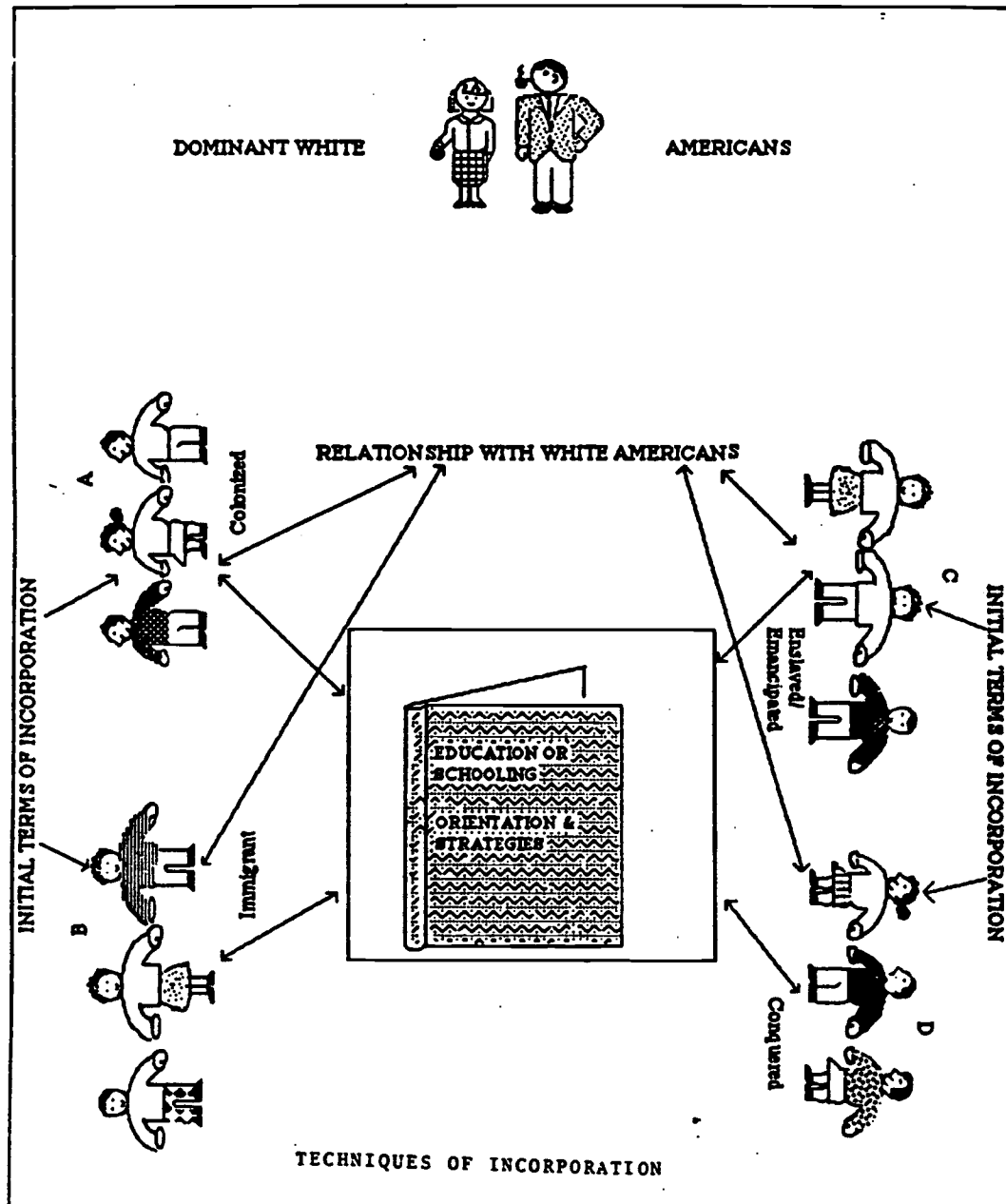
Appendix E

Research Figures for John U. Ogbu's Work

Figure E3

OCBU: MINORITY STATUS AND SCHOOLING IN A PLURAL SOCIETY

5/89



# OGBU: CULTURAL MODEL, AND SOCIOCULTURAL ADAPTATION OF INVOLUNTARY MINORITIES

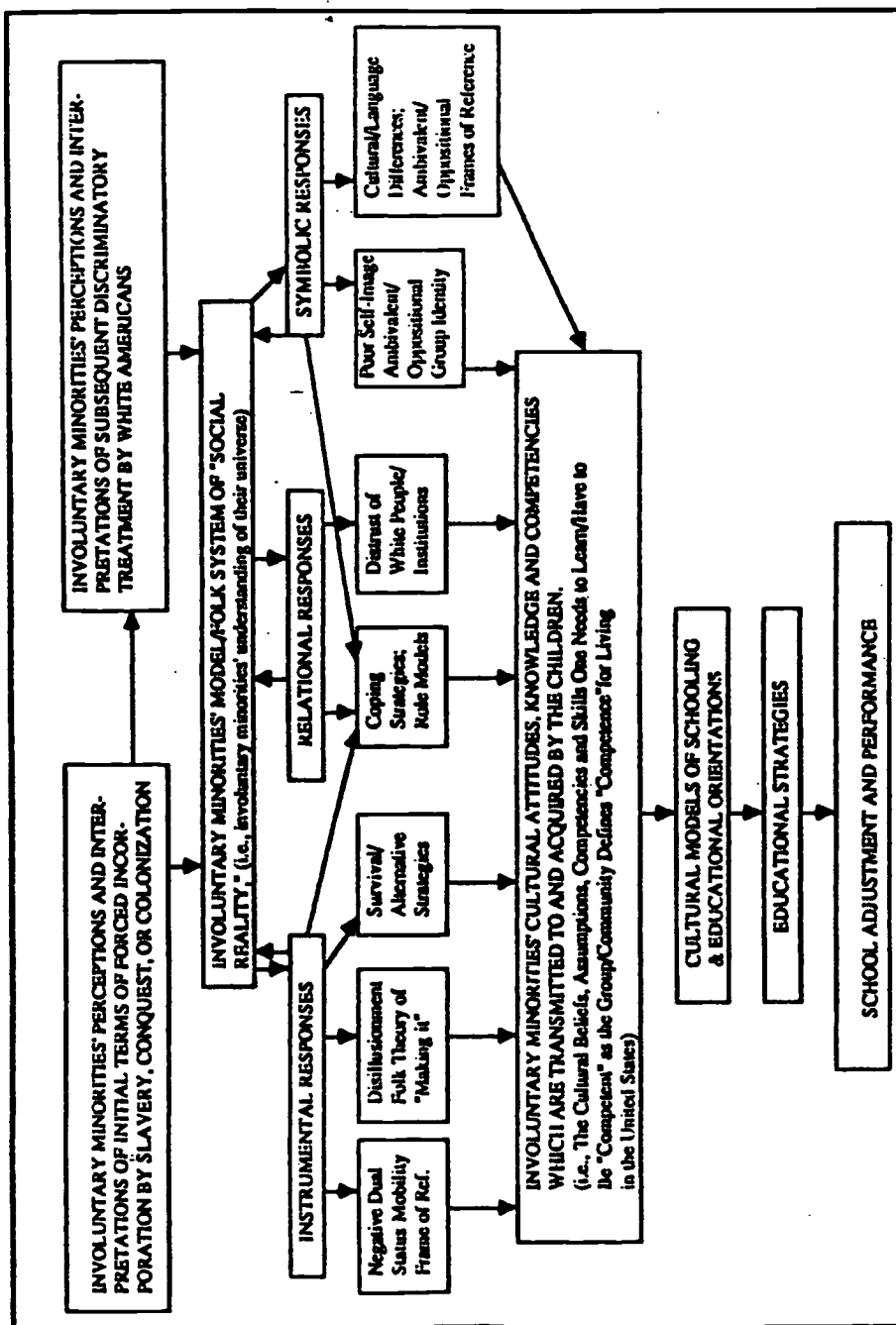


Figure E4

1905

# DIFFERENTIAL MINORITY "SOLUTIONS" TO COLLECTIVE PROBLEMS

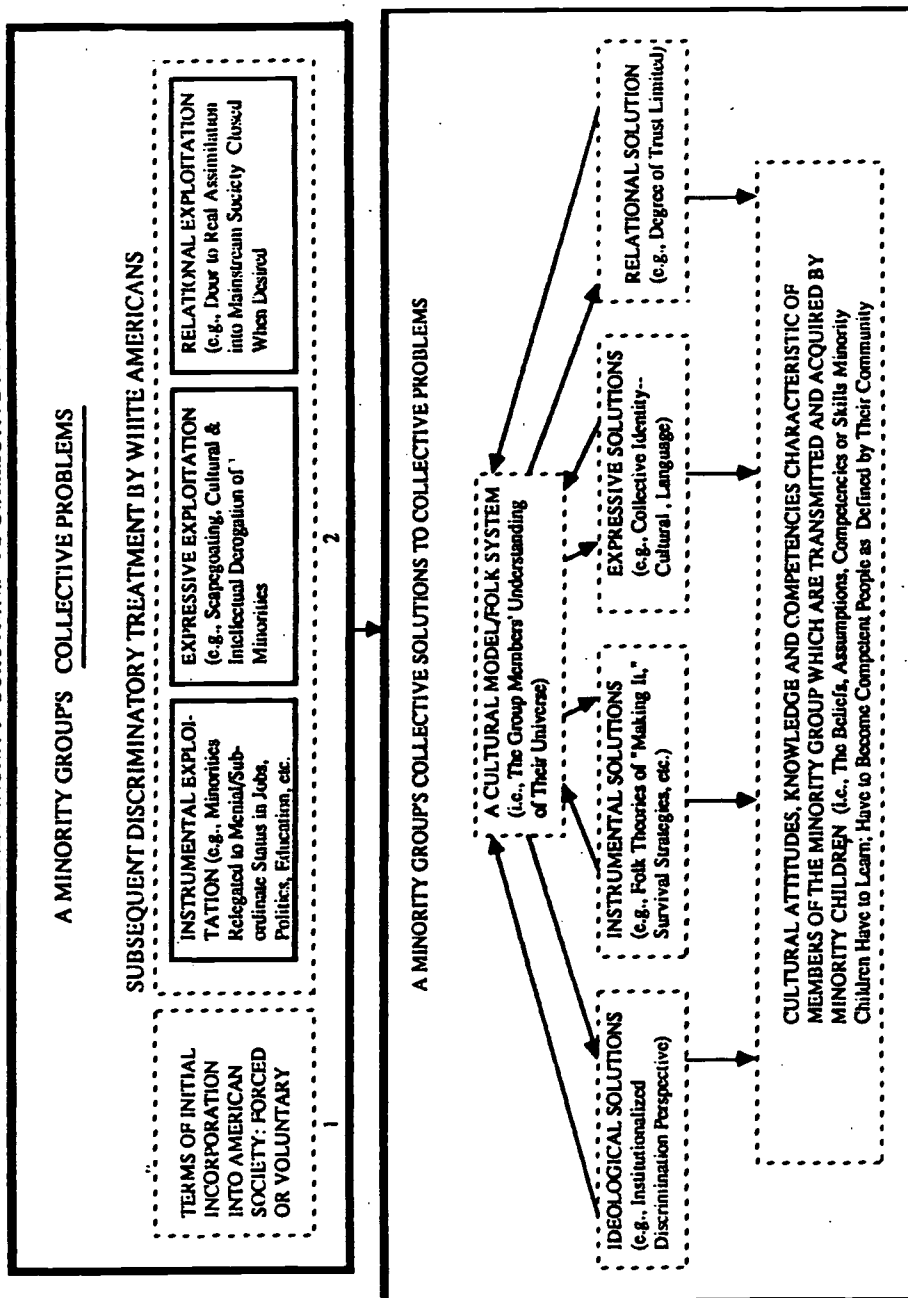


Figure E5

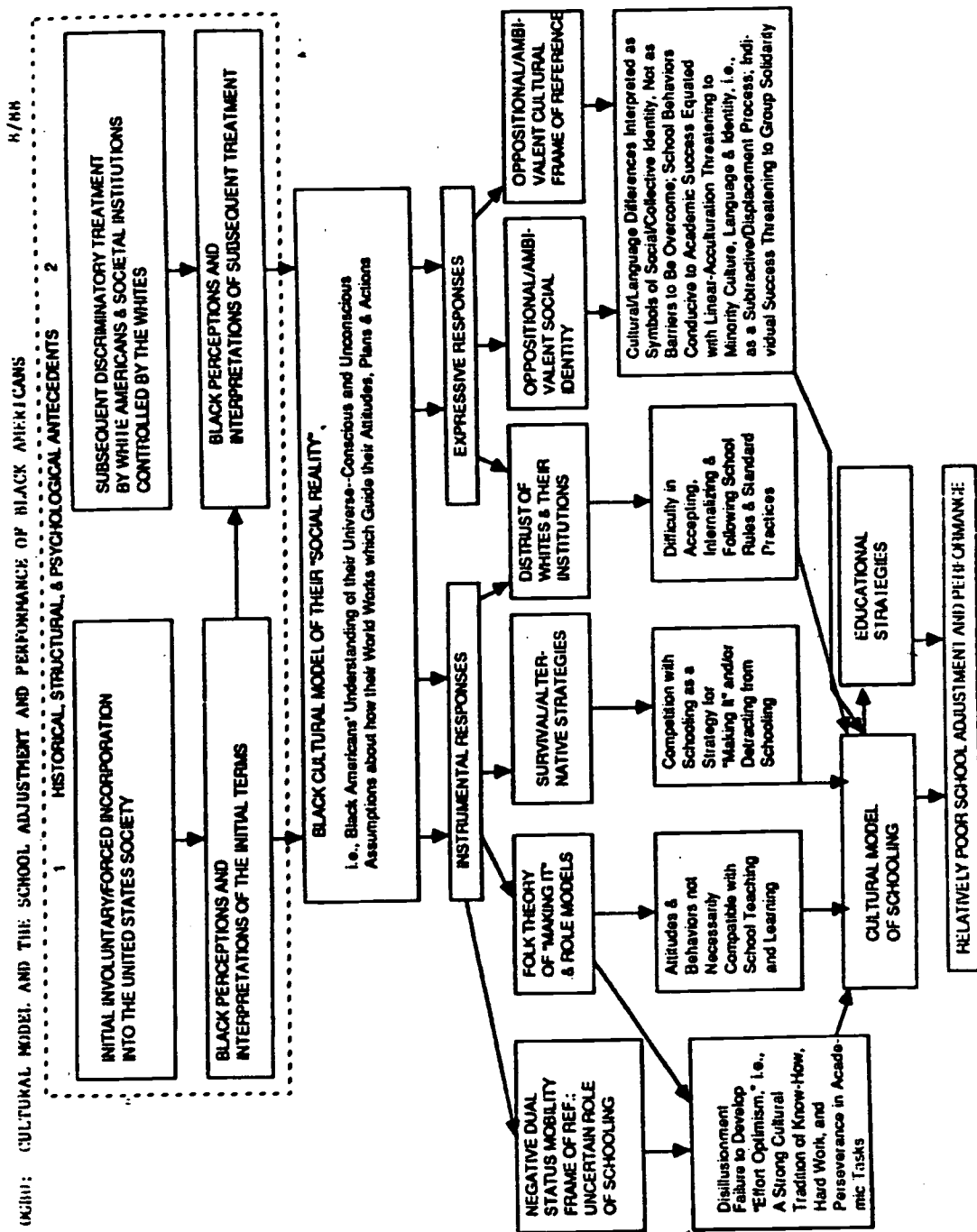


Figure E6

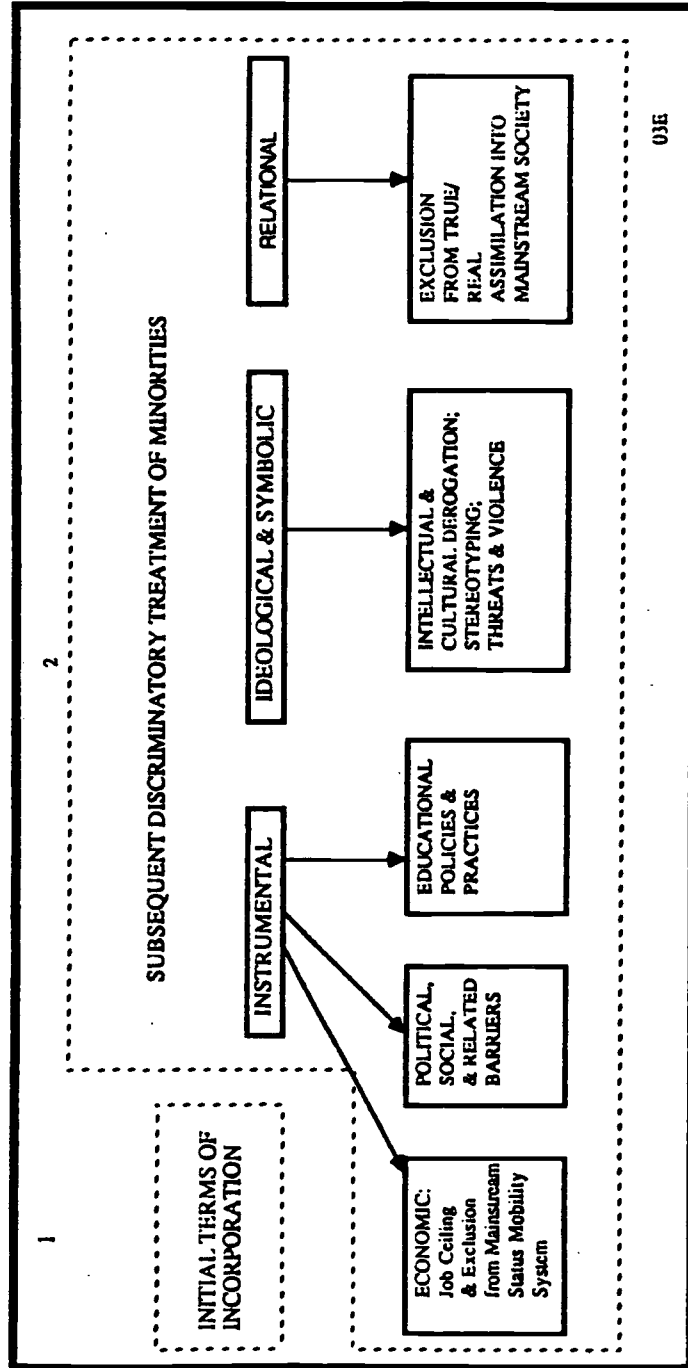


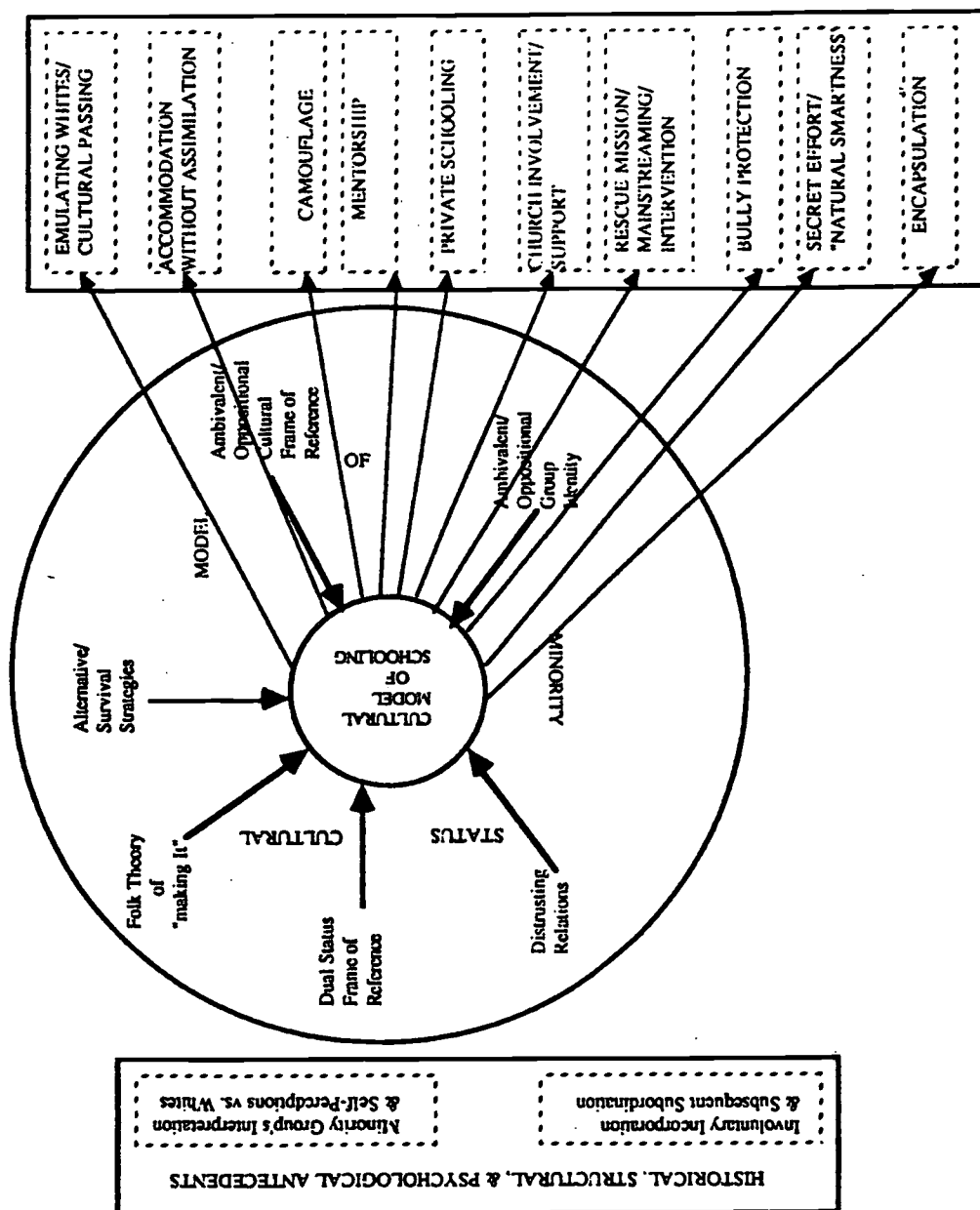
Figure E7

Figure E8

OGBU: CULTURAL MODEL &amp; INVOLUNTARY MINORITIES' EDUCATIONAL STRATEGIES

8/88

(The Individual in Collective Adaptation)





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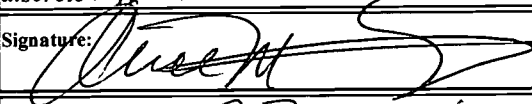
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